

Americans with Disabilities Act Transition Plan

Prepared for:



City of Arnold
2101 Jeffco Blvd,
Arnold, MO
63010

Oates Project Number: 220120

April 2022



Table of Contents

Executive Summary	
1.0 Regulatory Requirements	1
1.1 Americans with Disabilities Act.....	1
1.2 Definitions	1
1.3 ADA Requirements of the City	2
2.0 Steps to a Compliant Transition Plan	3
2.1 Designating an ADA Coordinator	3
2.2 Providing Notice to the Public about ADA Requirements	3
2.3 Establishing a Grievance Procedure	3
2.4 Developing Internal Design Standards, Specifications and Details	3
2.5 Assigning Personnel for the Development of the Plan and Collecting Data	3
2.6 Approving a Schedule and Budget for the Plan.....	4
2.7 Monitoring the Progress on the Implementation of the Plan	4
3.0 Public Outreach	5
3.1 Public Review and Comment Period	5
3.2 Public Meeting	5
4.0 ADA Design Standards.....	6
4.1 Incorporation into City of Arnold Standards	6
4.2 Implementation of ADA Design & Construction Standards	7
5.0 Administrative Documents.....	8
5.1 Inventory Methodology	8
5.2 City Documents	8
5.3 Alterations and Undue Burden	8
5.4 Recommendations.....	8
6.0 Sidewalk Transition Plan	9
6.1 Inventory Methodology	9
6.2 Sidewalk Data Collected.....	9
6.3 Obstruction Data Collected	9
6.4 Curb Ramp Data Collected	9
6.5 Scoring and Ranking	9
6.6 Prioritization.....	11
6.8 Potential Funding Sources / Programming	13
6.9 Monitoring of the Plan.....	14
6.10 Recommendations.....	14

EXHIBITS

- EXHIBIT 1 – NOTICE UNDER THE AMERICANS WITH DISABILITIES ACT
- EXHIBIT 2 - ADA GRIEVANCE FORM
- EXHIBIT 3 – MEMORANDUM ON REVIEW OF CITY DOCUMENTS FOR ADA INCLUSION
- EXHIBIT 4 – PUBLIC INVOLVEMENT

APPENDIX A

A.1	Definitions.....	Appendix A-1
A.2	Sidewalk Data Collected.....	Appendix A-3
A.3	Obstruction Data Collected.....	Appendix A-3
A.4	Curb Ramp Data Collected.....	Appendix A-3
A.5	Pedestrian Signal Data Collected.....	Appendix A-4
A.6	Activity Score.....	Appendix A-5
A.7	Accessibility Score.....	Appendix A-10
	A.7.1 Sidewalk Accessibility Score.....	Appendix A-10
	A.7.2 Sidewalk Obstruction Score.....	Appendix A-12
	A.7.3 Curb Ramp Accessibility Score.....	Appendix A-14
	A.7.4 Pedestrian Signal Accessibility Score.....	Appendix A-18
A.8	Data Collections Matrixes.....	Appendix A-21
A.9	Summary of Sidewalk and Curb Ramp Findings.....	Appendix A-32
A.10	Aerial Exhibits for Sidewalk and Segments and Curb Ramps.....	Appendix A-36

Executive Summary

This ADA Transition Plan has been prepared pursuant to the Americans with Disabilities Act (ADA), which requires a transition plan to be completed by all public agencies with more than fifty (50) employees. The purpose of the ADA Transition Plan is to document the Public Works Department's evaluation of its pedestrian facilities on public rights-of-way and develop long-range plans for making those facilities accessible for all people, including those with disabilities. This Plan focuses on administrative documents prepared and maintained by the Department of Public Works and pedestrian facilities within the public rights-of-way owned and maintained by the City of Arnold or within public parks. The City Clerk has been designated as the city's ADA Coordinator and will serve as the primary clearing house and record keeper for all issues relating to ADA accessibility.

Administrative Documents

All programs and services offered by the Department of Public Works were evaluated to determine the level of ADA compliance, specifically the city design standards and documents prepared and maintained by the Department of Public Works. See **Chapter 5** and **Exhibit 3** for additional information.

Sidewalks, Curb Ramps & Pedestrian Signals

The ADA requires a self-inventory of pedestrian facilities within the public rights-of-way, all city sidewalks, curb ramps, and pedestrian traffic signals were inspected and categorized using the information gathered. The city created a comprehensive GIS database that will be used by city staff for future planning. If the pedestrian asset was found to not meet ADA standards, they were prioritized based on physical condition and proximity to pedestrian traffic generators. A missing curb ramp represents the highest barrier to ADA compliance based on physical condition. The highest activity areas are those around public facilities, schools and commercial developments along busy streets.

The city will develop a programmatic plan to ultimately address all areas of noncompliance throughout the city. However, since it is most likely not feasible for the City to improve all pedestrian facilities immediately, a scoring system was developed to allow the city to prioritize future improvements. The highest priority sidewalk and curb ramps were then divided into four tiers to help prioritize future improvements. The remaining sidewalk segments and curb ramps are categorized as Long-Term Priorities – Out Years Improvements. These sidewalk segments and curb ramps have minor ADA concerns and are least likely to have high pedestrian traffic. 1st Tier Improvements represent those sidewalk segments and curb ramps that are in the worst physical condition and most likely to have high pedestrian traffic. See **Chapter 6** and **Appendix A** for additional information regarding the development of the prioritization system.

It is anticipated that pedestrian traffic signals will be upgraded to meet ADA compliance as the accompanying vehicular traffic signals are upgraded. See **Chapter 6** and **Appendix A** for additional information.

Building, Properties, and Parks

All buildings, properties, and parks owned, maintained, or leased by the city are required to complete a self-evaluation of the existing facilities to document barriers to access and develop a plan to eliminate said barriers. The city has recently completed self-evaluations of several city buildings, properties, and parks. Under the ADA the city is under the obligation to complete all self-evaluations and systematically work towards eliminating barriers to access.

1.0 Regulatory Requirements

The Americans with Disabilities Act Sidewalk Evaluation and Transition Plan, (referred to as "the Plan") documents the City of Arnold (referred to as "the city") Department of Public Works evaluation of existing city owned pedestrian facilities and develops objectives for making those facilities accessible for all people including those with disabilities. This Plan focuses on public pedestrian facilities, including sidewalks and curb ramps located on public rights-of-way or within public parks. The Plan has been prepared pursuant to the Americans with Disabilities Act (referred to as "ADA"), which requires a transition plan to be completed by all public agencies with more than fifty (50) employees.

1.1 Americans with Disabilities Act

The Americans with Disabilities Act (ADA), enacted on July 26, 1990, is a comprehensive civil rights act that prohibits discrimination based on disability. As listed below, the act is divided into five separate titles that cover specific applications: Employment, Public Services (state and local government), Public Accommodations (commercial facilities), Telecommunications and Miscellaneous Provisions. The ADA is meant to complement the minimum guidelines presented in Section 504 of the Rehabilitation Act of 1973. While the city is covered by multiple titles of the ADA, **this Plan focuses on Title II of the ADA as the city is a public entity and specifically those programs, services or activities administered by the Department of Public Works.**

- Title I – Employment: This title is designed to remove barriers that would deny qualified individuals with disabilities access to the same employment opportunities and benefits available to others without disabilities. Employers must reasonably accommodate the disabilities of qualified applicants or employees.
- Title II - Public Services: This title prohibits discrimination by public entities on the basis of disability. The public entity is required to provide access to programs, services and activities provided by the state or local government.
- Title III - Public Accommodations: This title prohibits discrimination on the basis of disability by private entities in places of public accommodation. Examples include hotels, restaurants, golf courses, etc.
- Title IV – Telecommunications: This title requires telephone companies to have developed interstate and intrastate telephone relay services in every state.
- Title V - Miscellaneous Provisions: This title has a variety of provisions relating to the ADA as a whole, including its relationship to other laws and its impact on insurance benefits.

1.2 Definitions

Title II of the ADA addresses discrimination in relation to public services including "public entities". The ADA definition of a "public entity" includes any state or local government. Title II of the ADA requires that no person shall by reason of such disability be excluded from participation in or denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. Sidewalks and curb ramps are considered a "program" per Title II of the ADA, and therefore must meet the requirements of the Americans with Disabilities Act.

According to Sec. 12102 of Chapter 126 of Title 42 of the United States Code (Americans with Disabilities Act of 1990) the term "disability" means, with respect to an individual:

- (a) A physical or mental impairment that substantially limits one or more major life activities of such individuals;
- (b) A record of such an impairment; or
- (c) Being regarded as having such impairment.

The ADA does not specifically name all the impairments that are covered but describes in detail the conditions that are included or excluded as disabilities under the ADA. An example of an excluded disability is a transitory impairment; an impairment with an actual or expected duration of 6 months or less.

1.3 ADA Requirements of the City

The ADA presents specific items that the city or any "public entity" must perform to achieve compliance. The NCHRP 20-7 (232) – *ADA Transition Plans: A Guide to Best Management Practices* was developed to provide guidance in achieving ADA compliance. This document was used to create this Plan. These steps include:

- Perform a self-evaluation
- Develop a grievance procedure
- Provide notice about the ADA requirements
- Designate an individual to oversee Title II compliance (ADA Coordinator)
- Develop a transition plan if structural changes are necessary for achieving program accessibility
- Retain all grievances and ADA compliance checklists for a minimum of three years

The Plan lays out the steps and actions to ensure compliance with the above listed steps and achieving ADA compliance.

Administrative Requirements

The city is responsible for ensuring all-inclusive access for all properties, services, and programs offered by the city. In addition to sidewalks, curb ramps, and city owned buildings and facilities for which additional information is listed below, the city also maintains a website, in addition to other programs and services offered by various city departments. City buildings were assessed during the development of the Age Friendly Community 3 Year Action Plan. Refer to this document for additional information. The city must have a notice to the public stating the public's rights related to city properties, services, and programs offered by the city. Additionally, the city must have a process in which the public can file a complaint on ADA accessibility. While it will take time for the city to bring the entirety of their buildings and facilities into compliance, the city has an obligation to modify existing programs to accommodate all users. This plan focuses on the programs, services or activities maintained by the Department of Public Works.

Sidewalk, Curb Ramp & Pedestrian Signals Inventory Requirements

The sidewalks, curb ramps and pedestrian signals inventory must be available for inspection online through the city's website as well as at City Hall and is also available in alternative format (e.g. flash drive, large print, Braille) by request. This inventory identifies physical barriers in public rights-of-way under the jurisdiction of the city. This inventory will serve as a guide to help schedule repairs that have a higher priority and greater impact on the public. **See Appendix A** for the sidewalk and curb ramp inventory.

2.0 Steps to a Compliant Transition Plan

The National Cooperative Highway Research Program (NCHRP) Project Number 20-7 (232) – *ADA Transition Plans: A Guide to Best Management Practices* was used as a basis for the development of this Plan. The following steps were taken to meet the requirements identified in Chapter 2:

2.1 Designating an ADA Coordinator

The city has identified the City Clerk as the ADA Title II Coordinator, and he/she will be the primary point of contact on all issues related to ADA accessibility within the City of Arnold. He/She will also oversee the requirements outlined in the ADA notice to the public and in the grievance procedure. The ADA Title II Coordinator is available to answer questions from both the public and city employees about accommodating persons with disabilities and Title II of the ADA. All written requests should be sent to:

Tammi Casey, City Clerk
2101 Jeffco Blvd,
Arnold, MO 63010
Phone: 636-296-2100
Email: tcasey@arnoldmo.org

2.2 Providing Notice to the Public about ADA Requirements

The public participation process included specific efforts to include persons with disabilities, as well as the outreach groups that represent them. Because of their sensitivity to pedestrian travel, this group has specific concerns that differ from the general population. The public participation process also included city officials and the public. See **Chapter 3** for documentation of the city's public outreach effort. A notice to the public about ADA requirements has previously been developed and approved by the city. This notice should be posted at all city buildings and on the city's website. A copy of the notice is included in **Exhibit 1**.

2.3 Establishing a Grievance Procedure

The ADA Coordinator is responsible for ensuring that the grievance procedure is followed and that records are kept for at least three years. A grievance procedure has previously been developed and approved by the city. A copy of the grievance form is provided in **Exhibit 2**.

2.4 Developing Internal Design Standards, Specifications and Details

The city establishes standards for sidewalk construction in Section 410.650 – Street Standards of the "Code of Ordinances of the City of Arnold, Missouri" and references the standard specifications and details of the Department of Transportation of St. Louis County for additional standards and specifications.

2.5 Assigning Personnel for the Development of the Plan and Collecting Data

Oates Associates (Oates) was contracted by the city to inventory the existing facilities including curb ramps and sidewalks within city rights-of-way, identify ADA deficiencies, and develop procedures for implementing and scheduling work to provide an ADA compliant system.

The inventory for sidewalks and curb ramps was completed by Oates by walking the city's sidewalk system and recording the observed deficiencies on the sidewalks and curb ramps on a block-by-block basis. This information was recorded using a mobile global positioning satellite (GPS) unit. All the information collected was stored within a Geographic Information System (GIS) database. The GIS database developed for this project will be integrated into the GIS system that the city already implements. The database will be periodically updated as improvements are performed throughout the city.

2.6 Approving a Schedule and Budget for the Plan

By adopting this plan, the city has developed an implementation procedure to identify the sidewalk sections or curb ramp locations that are the most critical. While this Plan does include a prioritization for pedestrian facility improvements throughout the city, projects will be logically grouped together for construction efficiency and cost savings. Additionally, should projects be identified that are eligible for either federal or state funds these projects should be pursued regardless of the prioritization rank of these given segments or curb ramps. The implementation procedure will help guide the city to identify specific projects that will allow the city to maximize the improvements that can be performed within the available budget.

The city currently provides funding for sidewalk improvements through its General Funds, Roads and Bridges program for the Department of Public Works section of the budget as well as individual projects identified in the Capital Improvements Fund, Capital Projects program for the Department of Public Works section of the budget. Additionally, sidewalk improvements should be incorporated into other transportation improvement projects throughout the city. The final budget for sidewalk and curb ramp improvements within a given year will be determined by the Council during the development of the fiscal budget. Various state and federal funding sources are also available to fund specific projects throughout the city (e.g., Surface Transportation Program).

2.7 Monitoring the Progress on the Implementation of the Plan

The city is responsible for monitoring the progress of the Plan. The Plan should be updated as projects are completed and changes to ADA requirements are enacted. The ADA Coordinator will be responsible for assigning staff to monitor the various components of the Plan, with the expectation that the Department of Public Works will be responsible for ensuring compliance associated with improvements within the public rights-of-way.

3.0 Public Outreach

The ADA states that public entities are required to make available to all applicants, participants, residents, and other interested parties' information regarding the formation of the Plan. A primary goal of the Plan was to actively seek input from all interested parties, including those with disabilities and the groups that represent them. The ADA also requires that a copy of the Plan be made available for public review during a citizen review period.

3.1 Public Review and Comment Period

The ADA requires, as part of the development of the Plan, public input throughout the process. Since the Plan is a multi-year process that is designed to be flexible, it is critical that public involvement and comment continue to be sought through the entire length of the plan. The Plan was open for public comment on March 10th, 2022 and was open for 30 days. A copy of the public comment form is included in **Exhibit 4**. While the public comment period has closed, any resident or visitor who has a desire to comment or provide feedback on pedestrian accessibility throughout the city can contact the Department of Public Works at any point.

3.2 Public Meeting

A public meeting was held on November 4th, 2021 at 4PM at Arnold City Hall, 2101 Jeffco Boulevard. The meeting was advertised on the City's website and invites were sent to representatives of the disability community, Disability Resource Association, and Fox School District to encourage them to reach out to their constituents and attend the meeting. At the meeting the public was presented with opportunities to provide feedback to the project team and City staff both in person and on comment cards. There was also an opportunity to provide feedback through a short survey on travel habits and obstacles to using the City's pedestrian network. A copy of all documents provided at the public meeting as well as a recap of the meeting are included in **Exhibit 4**.

4.0 ADA Design Standards

4.1 Incorporation into City of Arnold Standards

See Appendix A.1 for a list of definitions used through the Plan.

The following statutes, codes, guidelines, and standards were used in the development of this plan. Should other new statutes, codes or standards become applicable after the adoption of the plan, such new codes or standards shall be incorporated into this plan if they are more restrictive and/or exceed the existing standards.

- (a) Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), published by the U.S. Architectural and Transportation Barriers Compliance Board on July 26, 2011. These guidelines are currently published for review and comment and will replace the current ADAAG guidelines within the public rights-of-way upon final approval. The guidelines have not been approved by the U.S. Department of Justice but are currently identified as the best practice for pedestrian accommodations in public right-of-way. Once the PROWAG, in either its present form or a modified version, is adopted by the Department of Justice, the PROWAG will be the federal standards for accessibility compliance on public right-of-way. Since PROWAG represents the most current guidelines regarding public rights-of-way it was used as the guiding federal standards for the plan.
- (b) 2018 Missouri Standard Plans for Highway Construction published by the Missouri Department of Transportation effective beginning with the July 2018 bid opening. The standard plans represent the most current state standards.
- (c) Section 410.650 – Street Standards of the “Code of Ordinances of the City of Arnold, Missouri” are the city standards for the arrangement, character, extent, width, grade and location of all streets within the city. The street standards include the standards for sidewalks within the city. Section 410.650 – Street Standards represent the most current city standards.
- (d) Sidewalk details not covered by Section 410.650 – Street Standards of the “Code of Ordinances of the City of Arnold, Missouri” are covered by the Standard Drawings published by the St. Louis County Department of Transportation and last revised on April 29, 2020, and standard specifications for road and bridge construction published by the St. Louis County Department of Transportation on October 1, 2018.

The ADA Codes and Standards described in this section are intended to apply to all construction undertaken within city rights-of-way after the final approval and adoption of the Plan. This is meant to include all new construction, both private and public, as well as all construction undertaken as part of the Plan.

Pedestrian Facilities

The ADA Design Standards for sidewalk evaluation for pedestrian facilities on public rights-of-way within the city have been developed as a result of a review process to determine the most stringent standards from federal, state, and local guidelines and codes as they relate to various accessibility issues throughout the city. The standards developed to collect inventory data as part of this plan were determined by comparing city standards to both MoDOT standard plans and federal guidelines.

4.2 Implementation of ADA Design & Construction Standards

New Construction/New Alignment

All areas of newly designed and constructed facilities located on city property/right-of-way shall comply with all applicable ADA standards. Pedestrian facilities constructed on state right-of-way within the city shall meet the requirements of the MoDOT standard plans.

New Construction/Existing Alignment

Each addition on city property/right-of-way shall comply with all applicable ADA standards except as modified below.

Alterations to Existing Facilities/Existing Alignment

When existing elements located on city property/right-of-way are to be altered, each altered element shall comply with all applicable ADA standards including PROWAG and other standards list in Section 4.1 except as modified below:

- (a) Exception: In alterations, where compliance with applicable provisions is technically infeasible, the alterations shall comply with the standards to the maximum extent possible without placing undue burden on the city.
- (b) Exception: When new sidewalk is tying into an existing element that does not meet ADA standards at a project terminus, all sidewalk panels except the sidewalk panel directly adjacent to the existing elements shall comply with all applicable ADA standards. The sidewalk panel from existing to new shall not result in reduced accessibility. Examples of reduced accessibility include cross or running slopes that exceed the slopes of either the new or existing sidewalk panels.
- (c) Prohibited Reduction in Access: An alteration that decreases accessibility for the general public on a public right-of-way, site arrival points to the buildings or other facilities adjacent to the proposed adjustments on public right-of-way or to a room within a building and which are below the requirements for new construction at the time of the alteration will be prohibited.

Approval Procedures for Exceptions and Technically Infeasible Conditions

The city should require a written request to the applicable city department for making all determinations of exceptions and technical feasibility. Upon a determination on the status of an exception and technical infeasibility, such determination of the applicable city department shall be final, except that any member of the public can appeal a determination, per the procedures laid out in the City of Arnold Grievance Procedures under the ADA.

Dimension and Grades Tolerances

All dimensions and numerical requirements contained in these standards and any applicable local, state, and federal codes or statutes are absolute and requirements have been derived considering construction practices and constraints, and no dimensional or slope tolerances beyond the stated maximum or minimum are allowed. The person responsible for the construction operations will be responsible for ensuring that all equipment is calibrated properly. For contracted work, the city reserves the right to have any construction that is not built to the standards as listed, removed and reconstructed at no cost to the city.

5.0 Administrative Documents

5.1 Inventory Methodology

All programs and services that are provided by the Department of Public Works were evaluated to determine the current level of ADA compliance. These documents were reviewed for any reference to ADA standards, reasonable accommodations that are available upon request, and when necessary identifying locations where current ADA standards are not referenced.

5.2 City Documents

City documents associated with services provided by the Department of Public Works were evaluated to determine if any modifications were necessary to provide a higher level of ADA compliance to employees, citizens, or visitors to the Arnold. Additional city documents were evaluated to determine if the current design standards for new construction require Developers to construct all proposed improvements to current ADA standards. See **Exhibit 3** for proposed changes to city documents.

5.3 Alterations and Undue Burden

Alterations to programs and services that do not cause an undue burden should occur as soon as feasible. An example of alterations that do not cause an undue burden is relocating a program to a handicap accessible meeting room. If alterations are deemed necessary, the city is not required to undertake action if it would alter the program or would create a hazardous situation or represent an undue burden to the city.

5.4 Recommendations

The city should develop language and adopt the proposed recommendations to various city documents as listed in **Exhibit 3**. The city should ensure that all staff is prepared to fully accommodate individuals with disabilities and provide the services needed. The city shall also provide all employees with reminders about the ADA requirements and any information on changes to ADA law.

6.0 Sidewalk Transition Plan

6.1 Inventory Methodology

Self-inventory of pedestrian facilities is one of the requirements for any public entity according to the ADA. The city has created a comprehensive GIS database from the inventory information gathered that will be used by the city staff for future planning. All pedestrian facilities located on city-owned public rights-of-way and within parks maintained by the city were inventoried.

Collection procedures for sidewalk segments, obstructions, and curb ramps were done by walking every block of pedestrian accommodations within the City. Data was obtained through visual inspections and measurements and collected using a mobile GIS data collection unit. The unit had customized forms for OA staff to insert data that they collected related to sidewalks, obstructions, and curb ramps. The staff was trained on the current ADA guidelines and field procedures. The information collected was then analyzed using a scoring system. The scoring was modified as necessary to reflect the goals determined by the city in prioritizing repairs.

6.2 Sidewalk Data Collected

The sidewalk inventory was conducted in segments based on city blocks. A sidewalk segment is considered a continuous length of sidewalk between two termini; with termini points set at either intersecting roadways or at approximately 200' intervals. **See Appendix A.2** for the sidewalk data collected.

6.3 Obstruction Data Collected

An obstruction is any permanent or temporary obstacle or condition that affects the ability of a pedestrian to travel along a pedestrian access route. Obstructions were recorded where encountered along the sidewalk section. There could be several obstructions taken within a sidewalk segment and vertical displacements (elevation difference) were grouped together within a sidewalk segment. **See Appendix A.3** for the obstruction data collected.

6.4 Curb Ramp Data Collected

Because there are comprehensive ADA requirements specifically for curb ramps detailed measurements were taken at each curb ramp. **See Appendix A.4** for the curb ramp data collected.

6.5 Scoring and Ranking

A criteria system was developed to prioritize the ADA compliance by both physical condition and proximity to pedestrian traffic generators. Location is a factor because the *Department of Justice Title II Technical Assistance Manual* points to the fact that a public entity's programs related to sidewalk and curb ramps may be prioritized with respect to the location of a particular sidewalk or curb ramp.

Accessibility Score

To evaluate the physical condition of a given sidewalk segment or curb ramp, a scoring system was developed to assist the staff in prioritizing the severity of sidewalk segments and curb ramps. Each component of the ADA compliance criteria that was gathered during the sidewalk and curb ramp inventory was assigned a score based on overall impedance and the severity of obstructions within the route.

Curb Ramp Accessibility Score

The accessibility score for curb ramps was established by assigning a value for each component of a curb ramp that can affect overall compliance. The value of each component was established based on community feedback and communication with city staff. An example of the assigned value is that a 3' wide curb ramp has a higher priority than a curb ramp that lacks detectable warning panels. The total value for each component of curb ramp compliance is summed together to get the curb ramp accessibility score.

Sidewalk Accessibility Score

The sidewalk segment accessibility score is a combination of two different factors that affect the usability of a given sidewalk segment. The first half of the sidewalk segment accessibility score is the overall condition of the sidewalk segment. These components include sidewalk width, cross slope and running slope and are each assigned a different value based on the level of priority based on each factor.

Sidewalk Obstruction Score

The second half of the sidewalk segment accessibility score is the number of severities of point obstructions located within a sidewalk segment. Obstructions are point obstacles like utility poles or driveway cross slopes that also impact the functionality of sidewalk and curb ramps. Obstructions located within a curb ramp are included in the curb ramp Accessibility Score. Similarly, to other components a point value was placed on each point obstruction which is then applied to the sidewalk segment that the point obstruction exists within.

The scoring system equations are:

Sidewalk Segments (Between 1 AND 30)

$$\text{Sidewalk Score} = (\text{Sidewalk Accessibility Score} + \text{Sidewalk Obstruction Score})$$

Curb Ramps (Between 1 AND 55)

$$\text{Curb Ramp Score} = \text{Curb Ramp Accessibility Score}$$

After the scores were calculated, each location was categorized into a grouping of sidewalks with similar physical deficiency levels. The five groups are (1) no curb/sidewalk present, (2) high impedance, (3) medium impedance, (4) low impedance, and (5) significantly compliant.

See **Appendix A** for a detailed description of the scoring of sidewalks and curb ramps within the city.

Activity Factor

The proximity to traffic generators was evaluated as the second part of the two-part scoring system. The Activity Factor assigns a priority to each sidewalk segment or curb ramp based on the likelihood of having a high amount of pedestrian traffic. The activity factor considers these pedestrian traffic generators and predicts the likelihood of pedestrian usage based on eight different categories. For this plan, elementary and middle schools, walking trails, government buildings, metro bus stops and arterial and collector routes are considered the highest priority locations. The Activity Factor sums the activity scores and divides by the maximum number of available activity scores. That number is then added to 1 to get the Activity Factor (See Equation below). An Activity Factor with a lower number represents a greater potential for pedestrian traffic.

Activity Factor (Between 1 AND 2)

$$\text{Activity Factor} = 1 + (\text{Sum of Activity Points} / \text{Maximum Number of Activity Points})$$

After the activity factors were calculated, each location was categorized three groupings with similar pedestrian activity levels. The three groups are (1) high activity, (2) medium activity, and (3) low activity. A high priority activity factor represents a segment that is within proximity to a multitude of pedestrian traffic generators. While a low priority activity factor represents a segment that is near few if any pedestrian traffic generators.

See **Appendix A** for a detailed description of the scoring of traffic generators within the city.

6.6 Prioritization

Due to the scale associated with bringing all existing pedestrian facilities within the city into compliance and the ever-changing nature of the physical condition of sidewalk and curb ramps, the city has developed a matrix using the Accessibility Score and Activity Factor to prioritize improvements. This Plan has identified six (6) potential projects to increase accessibility throughout the city. These projects focus on those pedestrian assets that are high priority deficiencies located in areas with high levels of pedestrian traffic. **See Appendix A.9, Summary of Sidewalk and Curb Ramp Findings**, for additional information on these standalone projects. The city will initially focus on high priority deficiencies located in areas with high levels of pedestrian traffic, 1st Tier Improvements, as shown in red. 2nd to 4th Tier Improvements follow in priority. The remaining work - as shown in green - will be addressed in the out years of this Plan or in conjunction with other improvements.

While this Plan does include a prioritization for pedestrian facility improvements throughout the city, projects will be logically grouped together for construction efficiency and cost savings. Additionally, should projects be identified that are eligible for either federal, state or developer funds these projects should be pursued regardless of the prioritization rank of these given segments or curb ramps.

		Accessibility Score				
		No Significant Deficiency	Low	Medium	High	Sidewalk Gaps or Existing Sidewalk with No Curb Ramp / Fixed Obstruction
Activity Factor	Low				2 nd	1 st
	Medium			4 th	1 st	1 st
	High			3 rd	1 st	1 st

Priority Legend	
	1st Tier Improvements - Initial Focus
	2nd Tier Improvements
	3rd Tier Improvements
	4th Tier Improvements
	Long Term Priorities - Out Years
	No Significant Deficiency

Figure 1: Sidewalk and Curb Ramp Improvement Priorities

6.8 Potential Funding Sources / Programming

City of Arnold Budget

The city currently provides funding for sidewalk improvements through its Department of Public Works budget. Additionally, sidewalk improvements should be incorporated into other transportation improvement projects throughout the city. The final budget for sidewalk and curb ramp improvements within a given year will be determined by the Council during the development of the annual budget.

Local / Federal / State Programs

There are several local, state and federal funding sources available to assist municipalities with capital improvement projects. Most of these programs are competitive and have individual restrictions that must be reviewed for compliance with the proposed project. Below are descriptions of a few funding sources that may be applicable to the implementation of the Plan.

This is not an all-encompassing list of the available federal programs. Funding sources should be monitored and sought as situations arise to complete the goals and objectives of the city and the Plan.

- (a) Surface Transportation Plan (STP): The STP program provides flexible funding for local agencies to improve public roads and bridges, transit capital projects, and improvements to transit terminals and facilities. STP funding can be pursued for improvements on eligible roadways within the city. Eligible roadways are those functionally classified by the East West Gateway Council of Governments. A map showing the functionally classified roadways within the city can be found at <https://www.ewgateway.org/transportation-planning/roadway-functional-classification/>. "Transportation enhancements" including historic preservation, alternative non-motorized transportation, and landscaping are also funded using STP funds. STP funds can be used for wide variety improvements including road improvements with accompanying pedestrian accommodations as well as new construction and reconstruction of sidewalk and curb ramps. The East West Gateway Council of Governments currently administers STP funds for the St. Louis Metropolitan area.
- (b) Congestion Mitigation and Air Quality Improvement Program (CMAQ): The CMAQ program provides funds to help mitigate congestion and improve air quality. CMAQ projects commonly include intersection improvements and reconstruction. CMAQ funding can be pursued for improvements on eligible roadways within the city. Eligible roadways are those functionally classified by the East West Gateway Council of Governments. A map showing the functionally classified roadways within the city can be found at <https://www.ewgateway.org/transportation-planning/roadway-functional-classification/>. Pedestrian accommodations including accessible pedestrian signals can be included with CMAQ projects to improve pedestrian safety at the intersection. The East West Gateway Council of Governments currently administers CMAQ funds for the St. Louis Metropolitan area.
- (c) Transportation Alternatives Program (TAP): The Moving Ahead for Progress in the 21st Century (MAP-21) transportation bill combined multiple funding sources that fund pedestrian projects including Safe Routes to Schools (SRTS) and Recreational Trails Program (RTP). Money is still allocated for projects that were previously under these funding sources through the Transportation Alternative Program (TAP). The East West Gateway Council of Governments currently administers TAP funds for the St. Louis Metropolitan area.

Private Developers

Private development can have a direct impact on the adjacent public right-of-way. City ordinances currently require sidewalk construction along public right-of-way with the issuance of building permits. The City Ordinances can be updated as detailed in Exhibit 3 to provide further clarification for the construction of pedestrian facilities on public rights-of-way. On larger projects that may include the construction of new intersections with traffic signals, the developer could be required to include pedestrian accommodations including but not limited to curb ramps, marked crosswalks, pedestrian signals, and accessible pedestrian devices.

6.9 Monitoring of the Plan

Most construction projects include pedestrian accommodations in some form or another. All curb ramps and sidewalks constructed on city-owned right-of-way or future right-of-way should be inspected by the city prior to acceptance. New sidewalk should be logged into the GIS system either by city staff during an on-site assessment or based on information provided by the Contractor or Developer. All data collected should be in the same format as the existing inventory to maintain consistent data and the integrating of the scoring system. If the construction replaces an existing sidewalk or curb ramp, the new data should be stored over the existing data to provide an up-to-date look at the status of the Plan. If the project includes an expansion to the existing pedestrian network, the data should be added to the existing GIS system.

6.10 Recommendations

The following recommendations are proposed to increase ADA accessibility within the city and ensure future construction of public right-of-way is constructed to meet ADA standards:

- (a) Continue to pursue available external funds for applicable projects
- (b) Incorporate pedestrian improvements with applicable city projects
- (c) Enact changes to the city standards and ordinances as detailed in **Exhibit 3**.
- (d) Inspect all sidewalk and curb ramps prior to the city taking over maintenance responsibilities.
- (e) Keep the Plan current by inventorying new ramps and sidewalk segments.
- (f) Keep assigned city staff educated on current ADA requirements.

Exhibit 1

Notice Under the Americans with Disabilities Act



City of Arnold, Missouri Notice Under the Americans with Disabilities Act

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 ("ADA"), the City of Arnold will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities.

Employment: The City of Arnold does not discriminate on the basis of disability in its hiring or employment practices and complies with the regulations promulgated by the U.S. Equal Employment Opportunity Commission under Title I of the ADA.

Effective Communication: The City of Arnold will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in City of Arnold's programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modification of Policies and Procedures: The City of Arnold will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcome in the City of Arnold offices, even when pets are generally prohibited.

Anyone who requires auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of the City of Arnold, should contact Tammi Casey, City Clerk, (636) 296-2100, tcasey@arnoldmo.org as soon as possible but no later than 2 business days before the scheduled event.

The ADA does not require the City of Arnold to take any action that would fundamentally alter the nature of its programs or services or impose an undue financial or administrative burden to the City.

Complaints that a program, service, or activity of the City of Arnold is not accessible to persons with disabilities should be directed to Tammi Casey, City Clerk, (636) 296-2100, tcasey@arnoldmo.org.

The City of Arnold will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policies, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

Exhibit 2

ADA Grievance Form



City of Arnold Grievance Procedures Under The Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the American with Disabilities Act of 1990 ("ADA"). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the City of Arnold. The City's Personnel Policy governs employment related complaints of disability discrimination.

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint, will be made for persons with disabilities upon request.

The complaint should be submitted by the complainant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

Tammi Casey, City Clerk
Arnold City Hall
2101 Jeffco Boulevard
Arnold, Missouri 63010
Email: tcasey@arnoldmo.org

Within 15 calendar days after receipt of the complaint, City Clerk or his/her designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, City Clerk or his/her designee will respond in writing, and where reasonable accommodations are requested, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the City of Arnold and offer options for substantive resolution of the complaint.

If the response by the City Clerk or his/her designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the City Administrator or his/her designee.

Within 15 calendar days after receipt of the appeal, the City Administrator or his/her designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the City Administrator or his/her designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with a final resolution of the complaint.

All written complaints received by the City Clerk or his/her designee, appeals to the City Administrator or his/her designee, and responses from these two offices will be retained by the City of Arnold for at least three years.



City of Arnold
ADA Grievance Form

Name: _____ Date of Occurrence: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (____) _____ Email: _____

Please provide a complete description of your grievance:

Please specify the location of your grievance:

Please state what you think should be done to resolve the grievance:

Please attach additional pages or photo(s) as needed.

Signature: _____ Date: _____

Please return to:

Tammi Casey, City Clerk, Arnold City Hall, 2101 Jeffco Blvd, Arnold, MO 63010

Email: tcasey@arnoldmo.org

Upon request, reasonable accommodations will be provided in completing this form.

Contact Tammi Casey, City Clerk, Arnold City Hall, 2101 Jeffco Blvd, Arnold, MO 63010

Phone: (636) 296-2100

Email: tcasey@arnoldmo.org

Exhibit 3

Memorandum on Review of City Documents for ADA Inclusion

**Collinsville**

100 Lanter Court, Suite 1
Collinsville, IL 62234
618.345.2200

St. Louis

720 Olive, Suite 700
St. Louis, MO 63101
314.588.8381

Belleville

20 East Main Street
Belleville, IL 62200
618.416.4688

St. Charles

820 South Main, Suite 309
St. Charles, MO 63301
636.493.6277

MEMORANDUM**Date:** 4/18/2022**Project #:** 220120**Time:** 10:00 AM

To: Judy Wagner, Director of Public Works, City of Arnold
From: Travis Helmkamp
Subject: Review of City Documents for ADA inclusion

Ms. Wagner,

The following documents were reviewed as part of the ADA Sidewalk Evaluation and Transition Plan being prepared for the City of Arnold by Oates Associates, Inc. The documents were reviewed for ADA inclusion and this memorandum will serve as a summary of our findings in addition to recommendations to the various City documents. The documents reviewed, and all other permits, applications, and any other printed materials offered by the City of Arnold should be available upon request in alternative formats (e.g. large print and Braille). Potential language that could be added to all permits, forms, and other documents that require filling out is "Document is available in alternative format (e.g., large print, Braille, etc.) including assistance with completing the document. Please contact City staff for any accommodations."

This review is limited to documents related to construction of pedestrian assets within the public rights-of-way including sidewalk, curb ramps, pedestrian traffic signals as well as roadways and driveways. Additionally permit documents were reviewed for their relation to accessibility. The following documents were reviewed, and revisions are suggested for ADA inclusion:

- 1.) Excavation Permit
- 2.) Street Use Permit
- 3.) Notice Under the Americans with Disabilities Act
- 4.) Grievance Procedures Under the Americans with Disabilities Act
- 5.) Arnold, Missouri – Code of Ordinances

For all City agendas and public meetings a statement should be added to the end of each document to provide contact information should anyone wish to request an accommodation (e.g., sign language interpreter, Braille, large print, modification to the venue). We would suggest that this be added as a standard footer to ensure consistency across departments. Example language that other Cities have used is provided below:

- "Anyone requiring accommodations, provided for in the Americans with Disabilities Act (ADA), to attend this public meeting, please contact Tammi Casey, ADA Coordinator (636) 296-2100, a minimum of 48 hours prior to the meeting."
- "Any individual who would like to attend this meeting but because of a disability or needs some accommodations to participate should contact the City at (636) 296-2100, a minimum of 48 hours prior to the meeting."
- "The city is working to comply with the Americans with Disabilities Act (ADA). Reasonable accommodations will be provided when requested. To request an

MEMORANDUM

accommodation, please call City Hall at, (636) 296-2100, at least 48 hours in advance of the meeting and communicate your needs.”

The following recommendations are not meant to represent proposed verbiage for insertion into any City documents but rather represent portions of existing City ordinances or other various City documents where additional language pertaining to accessibility may be desired.

Excavation Permit

A note should be added to the instruction sheet stating that the application is also available in alternative format (e.g. large print, Braille) by request.

Street Use Permit

A note should be added to the permit stating that the application is also available in alternative format (e.g. large print, Braille) by request.

Notice Under the Americans with Disabilities Act

A draft Notice Under the Americans with Disabilities Act has been provided for City review, comment, and approval. Once adopted by Council the Notice should be posted at all public buildings and the City’s website.

Grievance Procedure Under the Americans with Disabilities Act

A draft Grievance Procedure Under the Americans with Disabilities Act has been provided for City review, comment, and approval. Once adopted by Council the grievance procedure should be available on the City’s website and available upon request.

Arnold, Missouri – Code of Ordinances

The following revisions are suggested to the Code of Ordinances:

Add a statement defining the applicable ADA standards for construction on City rights-of-way.

Throughout the Code of Ordinance the word “handicapped” is used. This is considered antiquated terminology. The new terminology is “person with a disability”.

Section 215.010 – Definitions – Disability. The definition for disability provided in the Code of Ordinances is a summary of the definition as provided in the Americans with Disabilities Act (ADA). We would suggest referencing Section 12102 of the ADA to avoid any potential confusion between the federal definition and the City’s definition.

Section 355.100 – Physically Disabled Parking. The wording “physically disabled” is antiquated terminology due to the presence of mental and other “unseen” disabilities. Potential revisions could include “Disability Parking”.

MEMORANDUM

Section 355.100 – Physically Disabled Parking. Potential revised language “The space shall be indicated by an upright sign whether on a pole or attached to a building upon which shall be inscribed the international symbol of accessibility (ADAAG 703.7.2.1) to indicate that the space is reserved for the exclusive use of vehicles which display a distinguishing license plate or card.”

Section 355.100 – Physically Disabled Parking. Revise “lift van accessible only” to “van accessible” as described in ADAAG 502.6.

Section 405.120 (B) (1) (g) (5)– “C-2” Commercial Districts. Revise to state “Parking shall comply with the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 405.120 (C) (1) (g) (7)– “C-3” Commercial Districts. Revise to state “Parking shall comply with the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 405.130 (A) (1) (f) (7) – “M-1” Industrial Districts. Revise to state “Parking shall comply with the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 405.130 (B) (7) (f) – “M-2” Industrial Districts. Revise to state “Parking shall comply with the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 405.150 (A) (1) (d) (2) (f). – Pedestrian Access and Crossings. Redefine the minimum requirements for pedestrian access to meet the minimum requirements of the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 405.150 (A) (1) (d) (3) (c) (i) (d). – Pedestrian Access and Crossings. Redefine the minimum requirements for pedestrian access to meet the minimum requirements of the 2010 Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Section 415.130 (A) (11) (d) – Signs Permitted in Light Commercial and Limited Zones. The applicable section of the ADA (Section 403.5.1) defines that the accessible route shall have a clear width of 32-inches long for a maximum length of 24-inches. This may be worth defining in the code to avoid confusion.

Section 410.650 (A) (16) – Street Standards.

Sidewalk requirements are provided in two distinct sections within the Code of Ordinances. We recommend to modify Section 410.650 (A) (16) to reference users to Section 530.680 Article IV Sidewalks, Curbs, Gutters, and Driveway Entrances.

An additional paragraph could be added to Section 530.680 to define minimum sidewalk widths. Potential revised language could be similar to “Sidewalks along local streets shall be a minimum of four (4) feet in width. Four (4) foot sidewalks shall require five (5) foot wide passing space every 200 feet. Driveways can be used as the passing space if it meets ADA requirements of sidewalks. Sidewalks are required along all collector and arterial streets and shall be at least five (5) feet in width. Sidewalks to be constructed adjacent to the curb line shall be at least six (6) feet in width regardless street classification. Sidewalks of a greater width may be required in commercial areas.”

MEMORANDUM

Section 530.680 Article IV Sidewalks, Curbs, Gutter, and Driveway Entrances was additionally reviewed with no suggested modifications to the existing language except as suggested herein.

Exhibit 4

Public Involvement

Americans with Disabilities Act Transition Plan
Arnold, Missouri
COMMENT FORM

We encourage you to express your comments and views on the proposed ADA Transition Plan. We are providing this form so that your comments can be considered prior to finalizing the Plan. You may email this form to Travis Helmkamp, Project Manager at travis.helmkamp@oatesassociates.com or print this form front-and-back and return it to the address provided on the back of this form. Your comments should be mailed by April 10th to provide timely consideration.

We appreciate your participation. If you would like to provide additional information, please submit your comments on additional pages.

Please print

Name: _____

Address: _____

City: _____ Zip Code: _____

Telephone Number: _____

Email: _____

Please check appropriate box(es)

- Homeowner in Arnold
- Business Owner in Arnold
- Interested party outside of Arnold
- Affiliated with _____ (organized group name)

My comments are:

(Fold on dotted line)

Place
Stamp
Here

Travis Helmkamp, Project Manager
Oates Associates
720 Olive Street, Suite 700
Saint Louis, MO 63101

(Fold on dotted line)

(Staple or tape)

#1

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Tuesday, April 05, 2022 2:32:23 PM
Last Modified: Tuesday, April 05, 2022 2:39:21 PM
Time Spent: 00:06:58
IP Address: 162.205.25.136

Page 1

Q1**I am a resident in the City of Arnold**

Please check appropriate box(es)

Q2

My comments are:

Many of the newer residential areas have public sidewalks. However, there seems to be a misunderstanding by some residents regarding double parking on the driveway (one car behind the other), thereby blocking the sidewalk. People with disabilities, older people, people with children, dogs or baby carriages are forced to get off the sidewalk and into the street and sometimes dirt/grass areas to get around the parked cars. Obviously, the owners believe that, since often the sidewalk portion is actually part of the owners property, they can park there, ignoring the easement regulations regarding obstruction. A friendly reminder could be issued for first-time offenders to remind them of "the right thing to do", followed by a fine.



CITY OF ARNOLD, MISSOURI
DEPARTMENT OF PUBLIC WORKS
ADA EVALUATION AND TRANSITION PLAN

Pedestrian Accessibility Survey

The City of Arnold is in the initial phase of updating its ADA Evaluation and Transition Plan. The plan is mandated by Title II of the American with Disabilities Act (ADA) passed into law on July 26, 1990 for every public entity with over fifty (50) employees. The initial phase of the plan will include an inventory of existing sidewalks, curb ramps and other pedestrian related facilities in the City right-of-way and City buildings. The plan will provide guidance on future construction needs to make the City accessible to all citizens. This survey is intended to get public input on the pedestrian routes and travel habits of our citizens and visitors.

Please complete the form and either drop it off at City Hall to the Director of Public Works or mail to:

City Hall
2101 Jeffco Blvd
Arnold, MO 63010
Phone: (636) 296-2100

1. Which of the following statements apply to you? (Select all that apply and mark with an X)
 - I am a resident in the City of Arnold
 - I am a property owner in the City of Arnold
 - I work in the City of Arnold
 - I frequently visit City of Arnold businesses for entertainment, goods or services

2. What is your age? (Select one and mark with an X)
 - Under 18 years
 - 18 to 35 years
 - 36 to 65 years
 - 66+ years

Pedestrian Accessibility Survey Continued

3. Do you or does any person living in your home have any of the following disabilities that affect traveling on sidewalks? (Select all that apply and mark with an X)

- Blind or low vision
- Difficulty walking
- Deaf or hard of hearing
- Post-traumatic stress disorder
- Development disorder
- Managing emotions
- Brain injury or other neurological disorder
- On the autism spectrum
- None
- Other (please specify) _____

4. Are you a caregiver for anyone who has one or another of the following disabilities that affect traveling on sidewalks? (Select all that apply and mark with an X)

- Blind or low vision
- Difficulty walking
- Deaf or hard of hearing
- Post-traumatic stress disorder
- Development disorder
- Managing emotions
- Brain injury or other neurological disorder
- On the autism spectrum
- None
- Other (please specify) _____

5. If you use a device or the assistance of a caregiver to get around, please tell us what that device is and/or what the caregiver does to assist you:

6. What is your primary mode of transportation? (Select one and mark with an X)

- Car / Van
- Bus
- Bicycle
- Walking/ Wheeling

Pedestrian Accessibility Survey Continued

7. What is your secondary mode of transportation? (Select one and mark with an X)

- Car / Van
- Bus
- Bicycle
- Walking/ Wheeling

8. How often do you use city sidewalks? (Select one and mark with an X)

- Daily
- A few times a week
- Weekly
- Monthly
- Never

9. Which of the following best describes the primary reason that you use City sidewalks? (Select all that apply and mark with an X)

- To access buses or MetroLink
- To access Call-A-Ride
- For exercise / health / pleasure
- To access entertainment, goods or services (groceries, errands, etc.)
- Travel to school / church / public facilities (City Hall, libraries, etc.)
- Travel to work
- To socialize with friends or family
- To obtain medical care
- Other (please specify) _____

10. Does someone in your household use the sidewalk system to travel to and from school (including using the sidewalk to get to the school bus stop)?

- Yes
- No

If yes, please list the school that you / your child attends: _____

Pedestrian Accessibility Survey Continued

11. What City of Arnold government buildings or parks do you frequent the most?

(List three of them that apply)

1. _____

2. _____

3. _____

12. Prioritize the following types / locations of the City sidewalks that should be improved first (Rank in order from 1-8 with 1 being the most critical)

____ Residential streets

____ Multi-lane streets

____ Sidewalk leading to or from schools

____ Sidewalk into commercial areas

____ Sidewalk leading to or from City facilities (parks, City Hall, etc.)

____ Bus stops

____ Intersections

____ Traffic signals at intersections

13. Please list up to three locations where you have that difficulty

1. _____

2. _____

3. _____

Pedestrian Accessibility Survey Continued

14. Do you ever travel in a street because the sidewalk is difficult or impossible to use?
(If so, please describe three locations where you have that problem)

1. _____

2. _____

3. _____

15. What conditions along City streets / sidewalks affect your walking habits?
(Rank in order from 1-5 with 1 being the most critical)

_____ Proximity to motor vehicles / drivers

_____ Difficult / unsafe street crossings

_____ Sidewalks in poor condition

_____ Missing or difficult curb ramps

_____ Obstructions

Pedestrian Accessibility Survey Continued

16. Please complete the following photographic sidewalk evaluation survey. Rank the following obstacles / conditions 1 through 6 in order of impact to your daily travel (1 being the highest impact and 6 the least impact). Photographic examples provided below.



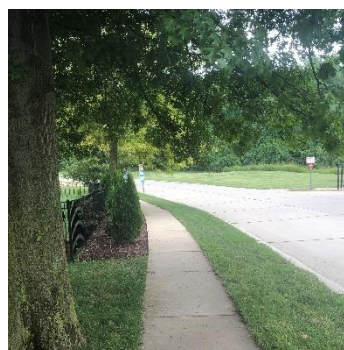
_____ Trip Hazards (e.g. uneven sidewalk panels)



_____ Poor Surface Quality (e.g. broken sidewalks)



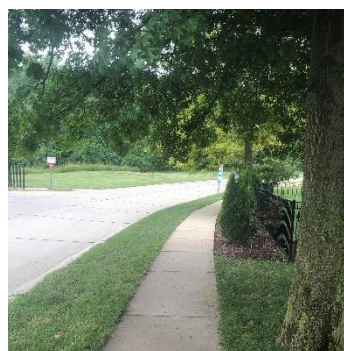
_____ Obstructions (e.g. utility poles, fire hydrants etc.)



_____ Steep Cross Slope (e.g. sidewalk is not flat)



_____ Non-Continuous Sidewalks (e.g. sidewalk starts and stops)



_____ Encroachment (e.g. trees, bushes etc.)

Pedestrian Accessibility Survey Continued

17. Please complete the following photographic curb ramp evaluation survey. Rank the following obstacles / conditions 1 through 6 in order of impact to your daily travel (1 being the highest impact and 6 being the least impact). Photographic examples provided below.



_____ Obstruction (e.g. utility poles, fire hydrants etc.)



_____ Standing Water/ Debris (e.g. standing water, ice accumulates in winter)



_____ No Curb Ramps (e.g. 6 inch drop off the sidewalk)



_____ No Detectable Warning Panels (e.g. bumps at the bottom of the curb ramp)



_____ Curb Ramp Grades (e.g. steep slopes)



_____ Broken curb ramp (e.g. uneven walking surface)

Pedestrian Accessibility Survey Continued

18. Please identify any specific difficulties or constraints along the routes you normally take:

19. If you have a disability or travel with someone who has a disability, what accessibility problems have you experienced along the City's sidewalk and pedestrian facilities?

Thank you for your participation!

For more information, contact Judy Wagner, Director of Public Works at:

E-mail: jwagner@arnoldmo.org

Phone: (636) 282-2386

APPENDIX A

Sidewalk Transition Plan

Appendix A.1

Definitions

APPENDIX A

A.1 Definitions

The following list of definitions used throughout the entirety of this Appendix:

Accessible Pedestrian Signal (APS, or Audible Pedestrian Signal): A mounted device that communicated information to pedestrian in both visual and non-visual formats (i.e. audible tones and vibrotactile surfaces) related to the pedestrian walk interval.

Clear Width: The effective width of a sidewalk or curb ramp, the actual distance that a pedestrian has to navigate an around an obstacle, as opposed to the full width of a sidewalk or curb ramp section.

Condition: A subjective analysis of the usability of a sidewalk or curb ramp based on cracking, spalling, or other visual deficiencies.

Cross Slope: The slope that is perpendicular to the direction of pedestrian travel.

Curb: A vertical or rolled transition that serves as a separation between the roadway or gutter and the sidewalk or green space.

Curb Line: A line at the face of the curb that marks the transition from the roadway or gutter to a sidewalk or green space.

Curb Ramp: A short ramp cutting through a curb that provides access between the sidewalk and the adjacent roadway surface.

Curb Type: The transition provided between the roadway or gutter and the sidewalk or green space (e.g. greater than 4", less than 4", etc.)

Detectable Warning Panel: A tactile, raised, surface feature built in or applied to walking surfaces or other elements to warn visually impaired people of hazards on the circulation path.

Diagonal Curb Ramp: A singular ramp that is diagonal to the pedestrian user's path of travel as well as oncoming vehicular traffic.

Driveway: Pavement that provides access for a motorized vehicle to access a single parcel of private property.

Driveway Slope thru Sidewalk: The cross slope of a sidewalk segment at a location where the driveway crosses the sidewalk.

Encroachment: An obstruction that limits the clear width of a sidewalk or curb ramp that can be removed through minimal work (e.g. parked vehicles, tree limbs, or bushes).

Fixed Obstruction: An obstruction that limits the clear width of a sidewalk or curb ramp that cannot be easily removed (e.g., drainage inlet, manhole, driveway slope, utility pole)

Flare Slope: The sloped sides of a perpendicular or parallel curb ramp where a pedestrian circulation path crosses the curb ramp.

Flush Transition: The transition between a curb ramp and either a landing at the top of a curb ramp or the gutter pan at the bottom of the curb ramp.

Grade Break: The intersection of two surfaces at different grades (slopes).

Green Space: The portion of the public right-of-way, usually grass, located between the sidewalk and the curb line or edge of roadway.

Impedance: A characteristic of a sidewalk or curb ramp that inhibits accessibility for pedestrian access.

Landing: The sidewalk panel located at the top of a curb ramp.

Landing Slope: The slope of the landing measured both directions, cross and running slope.

Obstruction: A permanent obstruction (e.g. utility pole or fire hydrant) that limits the clear width of a sidewalk or curb ramp.

Operating Force: The amount of force necessary to activate the pedestrian push button.

Parallel Curb Ramp: A system of two ramps that run parallel to existing curb lines to a lower landing that matches the elevation of the adjacent street.

Pedestrian Circulation Path: The predominant path that a pedestrian can be reasonably expected to utilize to travel from one destination to another (e.g. sidewalk).

Pedestrian Push Button: Electronic buttons that signal that a pedestrian is at a crosswalk and activates the walk interval.

Pedestrian Signal: A traffic signal that alerts pedestrians that the walk interval is active.

Perpendicular Curb Ramp: A system of two ramps with the main slope perpendicular to the curb line that directs traffic perpendicular to vehicular traffic.

Public Rights-of-Way: Land or property that is owned by a public entity and usually is acquired or devoted to transportation and/or pedestrian purposes.

Ramp Type: The design of ramp used to connect the pedestrian circulation path to the adjacent roadway (e.g., perpendicular curb ramp, diagonal curb ramp, or parallel curb ramp.)

Running Slope: The slope that is parallel to the direction of pedestrian travel.

Sidewalk: Any pedestrian accommodation that is located between the curb line or edge of roadway and the adjacent property line.

Surface: The existing material the sidewalk is constructed of (e.g., concrete, asphalt, brick).

Technical Infeasibility: An alteration to an existing element that has little likelihood of being accomplished due to existing constraints that cannot be overcome without placing an undue burden on the City.

Undue Burden: A requirement that can be achieved only at a significant difficulty or expense to the City or other property owner.

Vertical Displacement: A vertical difference of greater than ¼" along the pedestrian circulation path that can result in a trip hazard.

Walk Interval: The phase of a pedestrian traffic signal during which a pedestrian is to begin crossing a roadway.

A.2 Sidewalk Data Collected

At each end of the sidewalk segment the following measurements and data were collected:

- (a) Sidewalk Surface: The type of surface present; including an option for no sidewalk present.
- (b) Type of Curb: Identify whether a curb is present, and if present the type of curb.
- (c) Green Space: Identify whether a green space is present, and if present, note the distance between the curb line and sidewalk.
- (d) Condition: An overall assessment of the current condition of the sidewalk.
- (e) Width of Sidewalk: The width of the sidewalk measured perpendicular to the direction of pedestrian travel.
- (f) Cross Slope: The slope of the sidewalk perpendicular to the direction of pedestrian travel.
- (g) Running Slope: The slope of the sidewalk parallel to the direction of pedestrian travel and whether the running slope varies from the running slope of the adjacent roadway.

A.3 Obstruction Data Collected

The following measurements and data were recorded as obstructions where encountered along the sidewalk section:

- (a) Fixed Obstruction: Identify the type of obstruction (e.g. utility poles, inlets, sidewalk grating, or manholes).
- (b) Encroachments: Identify the type of obstruction (e.g. tree limbs, parked vehicles, or shrubbery).
- (c) Vertical Displacement: The abrupt grade changes between two adjacent sidewalk panels.
- (d) Driveway Slope: Indicates driveway cross slopes greater than 2% is present.
- (e) Clear Width: Indicates width at any fixed obstruction or encroachment that is less than 4 feet and limits the ability for a pedestrian to continue along the pedestrian route.
- (f) Obstruction Width: Indicates the width of an obstruction in situations where the obstruction width varies from the width of the sidewalk.
- (g) Obstruction Length: Indicates the length of an obstruction in situations where an obstruction extends across multiple sidewalk panels.
- (h) Ramp Slope: Indicates a running slope parallel to the sidewalk at the location when the pedestrian route ramps down at a residential or commercial driveway.
- (i) Railway Flangeway Gap: Indicated the distance parallel to the sidewalk at at-grade railway crossings.
- (j) Obstruction Number: Number of similar obstructions within a given sidewalk segment.

A.4 Curb Ramp Data Collected

The following measurements and data were recorded at each curb ramp:

- (a) Type of Ramp: The type of curb ramp present, including an option for no ramp present.
- (b) Surface Material: The type of surface present, including an option for no surface present.
- (c) Condition: An overall assessment of the current condition of the curb ramp.
- (d) Running Slope: The slope of the curb ramp parallel to the direction of pedestrian travel.

- (e) Cross Slope: The slope of the ramp perpendicular to the direction of pedestrian travel.
- (f) Flare Slope: The slope of the flare when the curb ramp is in the pedestrian circulation path, including an option for flare slopes outside of pedestrian circulation path.
- (g) Ramp Width: The width of the ramp at its narrowest location.
- (h) Ramp Length: The length of the ramp at the midpoint of the curb ramp.
- (i) Gutter Slope: The slope of the gutter pan parallel to the direction of travel.
- (j) Detectable Warning Panels: The type of detectable warning panel present, including an option for no detectable warning panel.
- (k) Vertical Displacement: Indicates the vertical displacement between the ramp and the landing or the ramp and the curb.
- (l) Dimensions of Landing: The dimensions of the sidewalk panel located at the top of the curb ramp.
- (m) Landing Slope: The slope of the landing in all directions.
- (n) Obstruction Present: The presence of any obstruction either fixed or an encroachment that limits the clear width of a curb ramp less than 4 feet.
- (o) Fixed Obstruction: Permanent objects within the curb ramp that limits the curb ramp width to less than 4 feet (e.g., utility poles or manholes).
- (p) Encroachment: Temporary objects within the curb ramp that limits the curb ramp width to less than 4 feet (e.g., tree limbs or parking conflicts).
- (q) Width of Crosswalk: The distance between the inside edge of the crosswalk pavement markings, including an option for no sidewalk crossed.
- (r) Alignment of Crosswalk: Indicates whether the marked crosswalk leads a pedestrian to a curb ramp on the opposite side of the roadway.

A.5 Pedestrian Signal Collected

The following measurements and data were recorded at each curb pedestrian traffic signal:

- (a) Distance from curb line: Horizontal distance pedestrian the pedestrian push button and the curb line.
- (b) Pedestrian Push Button Height: The height of the pedestrian push button from the adjacent sidewalk pavement to the center of the pedestrian push button.
- (c) Pedestrian Detector: Indicates the presence of pedestrian push button or some other method to activate the walk interval.
- (d) Non-Visual Aids: Indicates the presence of non-visual methods to alert pedestrians to a pedestrian push button or some other method to activate the walk interval.
- (e) Clear Space Widths: The width of the landing for the pedestrian push button.
- (f) Clear Space Slopes: The slope of the landing for the pedestrian push button in all directions.
- (g) Distance from the Pedestrian Push Button to the Crosswalk: The proximity of the pedestrian push button to the crosswalk that the pedestrian push button services.
- (h) Pedestrian Push Button Proximity: The proximity of the pedestrian push buttons to each other.
- (i) Operating Force: The amount of force necessary to activate the pedestrian push button.
- (j) Countdown Signals: The presence of countdown signals during the walk interval.
- (k) Alternative Name Format: Indicated the street to be crossed in an alternative format (e.g., braille or verbal)

A.6 Activity Scores

The following activity scores were included in the Activity Factor equation based on a sidewalk segments or curb ramps proximity to the traffic generators. The Activity Factor prioritizes both sidewalk segment and curb ramps that are near locations that are likely to generate heavy amount of pedestrian traffic.

A.6.1 Schools

Accessible sidewalks and curb ramps not only provide safe access to students who currently travel to school but encourage more parents and students to travel to school by foot. Based on discussions with school officials' elementary and middle schools receive the highest volume of non-motorized travelers to and from schools. While all schools were incorporated into the school activity score, a higher priority was placed on elementary and middle schools in the city. The elementary and middle schools include:

- Lone Dell Elementary, 2500 Tomahawk Drive
- Meramec Heights Elementary, 1340 W. Outer 21 Road
- Rockport Heights Elementary, 3871 Jeffco Boulevard
- Sherwood Elementary, 1769 Missouri State Road
- Fox Elementary, 739 Jeffco Boulevard
- Fox Middle School, 743 Jeffco Boulevard
- Richard A Simpson Elementary School, 3585 Vogel Road

Additionally, high schools and higher education are also included in this activity score. These schools are:

- Fox High School, 751 Jeffco Boulevard
- Jefferson College Arnold, 1687 Missouri State Road
- Missouri Baptist University, 1687 Missouri State Road

Also, Private schools added for calculating activity score are:

- People's Christian Academy, 1770 Missouri State Road
- St. John's Lutheran School, 3511 Jeffco Boulevard

This activity score is assigned based on a radial distance to these destinations.

Proximity to Schools	Point Value
Within the walk zone and < 1/10 mile	10
Within the walk zone and between 1/10 mile and 1/4 mile	7
Within the walk zone and between 1/4 mile and 1/2 mile	4
Outside the walk zone or > 1/2 mile	0

Table A1: School Activity Score

A.6.2 Parks

The City of Arnold was numerous parks and other recreational facilities within the city. Parks provide opportunities for residents to reconnect with nature in addition to leisure activities, sports fields, and playgrounds. Walking and bike paths are accounted for under Walking Trails. The following parks were included in the activity score:

City Parks:

- Arnold City Park, 2400 Bradley Beach Road
- David R. Collins Park, Causeway Drive & Bayvue Boulevard
- Ferd B. Lang Park, 1820 Old Lemay Ferry Road
- Flamm City Park
- Jim Edwards Archery Park, 1136 Telegraph Road
- Ozark Drive Paw Park, 1839 Ozark Drive
- Paw Park at Arnold City Park, 2400 Bradley Beach Road
- Paw Park at Ferd B. Lang Park, 1820 Old Lemay Ferry Road
- Pomme Creek Park, 1 Golfview Drive
- Strawberry Creek Nature Area
- Teszars Woods Conservation Area
- Arnold Jaycees Skate Park, 1820 Old Lemay Ferry Road
- Arnold Recreation Center, 1650 Missouri State Road
- Arnold Farmers Market, 2400 Bradley Beach Road

This activity score is assigned based on the radial distance to these properties.

Proximity to Parks	Point Value
< ¼ mile	5
¼ mile – ½ mile	3
> ½ mile	0

Table A3: Parks Activity Score

A.6.3 Walking Trails

The City of Arnold as well as Great Rivers Greenway have established a series of walking trails and greenways that provide recreational activities for residents throughout the City of Arnold. The following walking trails were included in the activity score:

- Arnold City Park Trails
- Meramec Greenway
- Pomme Creek Golf Course Trail
- Mississippi River Trail
- Ferd Lang Park to Paw Park Trail
- City Park Trail
- Future Meramec Greenway Trails
- Pomme Creek Golf Course Trail

This activity score is assigned based on the radial distance to these properties.

Proximity to Parks	Point Value
< 1/10 mile	5
1/10 mile – ¼ mile	3
> ¼ mile	0

Table A4: Walking Trails Activity Score

A.6.4 Government Buildings

Government buildings provide critical services to city residents and businesses. Government buildings includes those operated by the City of Arnold as well as state and federal government facilities that offer services to citizens of Arnold. The ADA emphasizes the importance of “walkways serving local government offices and facilities” as government buildings are a critical element of the civic experience. This activity score is assigned based

on the radial distance to these buildings. The following government buildings were included in the activity score:

- US Post Office, 1314 Jeffco Boulevard
- Missouri Career Center, 3675 W Outer Road #102
- Jefferson County Health Department, 1818 Lonedell Road
- Developmental Services, 12 Municipal Drive #A
- Jefferson County Library, 1701 Missouri State Road
- Arnold City Hall/Municipal Court, 2101 Jeffco Boulevard
- Arnold Recreation Center, 1650 Missouri State Road
- Arnold Food Pantry, 2024 Key West Drive
- Arnold License Office, 3540 Jeffco Boulevard #120

Proximity to Government Buildings	Point Value
< ¼ mile	10
¼ mile – ½ mile	5
> ½ mile	0

Table A5: Government Building Activity Score

A.6.5 Bus Stops

Oats Transit operates a fixed route bus system that provides dependable, accessible transportation to locations throughout the city of Arnold. This transportation is especially important to the elderly and people with disabilities that rely on the bus system to get to work and be active members of the community. This activity score is based on its proximity to these bus stops. The bus route can be found at <https://www.oatstransit.org/arnold>.

Proximity to Metro Bus Stops Trails	Point Value
< ¼ mile	10
¼ mile – ½ mile	5
> ½ mile	0

Table A6: MetroBus Stop Activity Score

A.6.6 Shopping Center

Shopping Center’s include areas in which employment centers and retail centers reside within the city. The shopping center’s included in this prioritization factor varies from large shopping districts (e.g., Arnold Commons and Water Tower Plaza) to individual businesses (e.g., Marcus Arnold Cinema and Dollar General). Removing the physical barriers to these traffic generators allows all residents to fully participate in all aspects of civic life. The Traffic Generators in the City of Arnold are:

- Marcus Arnold Cinema, 1001 Pevely Pointe Dr
- Arnold Commons, (Lowe’s, Dierbergs, Office Depot)
- Arnold Crossroads (Gordmans, 24 Hr Fitness)
- Jefferson County Plaza (Home Depot, Target)
- Water Tower Plaza (Walmart, Schnucks, Kohls)
- Dollar General, 505 Jeffco Boulevard
- Circle K, 502 Jeffco Boulevard

This activity score is assigned based on the radial distance to the traffic generators.

Proximity to Traffic Generators	Point Value
< 1/10 mile	10
1/10 mile – 1/4 mile	5
> 1/4 mile	0

Table A7: Traffic Generators Activity Score

A.6.7 Street Classification

Arterial and collector routes serve as the major thoroughfares through the City of Arnold providing access to many destinations within the City such as shopping centers, employment centers, and government offices. Arterial and collector routes typically have higher and faster vehicular traffic than residential streets due to the connectivity they provide. Residential streets typically have a higher pedestrian traffic but are safer for pedestrians because they only provide access within a specific neighborhood and therefore have slower motor vehicle traffic. Street classification is based on data provided by East West Gateway except for Principal Residential which was developed for the Plan to provide higher priority for the principal routes that connect subdivisions to principal and arterial routes.

The Freeways / Expressways are:

- I-55 (throughout city)
- Missouri 141 (western city limits to I-55)

The Principal Arterials are:

- Jeffco Boulevard (throughout city)
- Telegraph Road (throughout city)

The Minor Arterials are:

- Arnold Church Road (Old Lemay Ferry Road to Jeffco Boulevard)
- Old Lemay Ferry Road (Missouri 141 to southern city limits)
- Richardson Road (Vogel Road to Jeffco Boulevard)
- Vogel Road (Richardson Road to southern city limits)

The Major Collectors are:

- Tenbrook Road (Jeffco Boulevard to Arnold Tenbrook Road)
- Arnold Tenbrook Road (Jeffco Boulevard to Telegraph Road)
- Astra Way (Missouri State Road to Lonedell Road)
- Lonedell Road (Astra Way to W Outer Road)
- Lonedell Road (Pomme Road to Missouri State Road)
- Missouri State Road (western city limits to Old Lemay Ferry Road)
- Manufacturers Drive (Starling Airport Road to Arnold Tenbrook Road)
- Michigan Avenue (Church Road to Jeffco Boulevard)
- Missouri State Road (western city limits to Old Lemay Ferry Road)
- W Outer Road (Missouri 141 to Lonedell Road)
- W Outer Road (Vogel Road to southern city limits)
- Pomme Road (western city limits to Old Lemay Ferry Road)
- Richardson Road (Old Lemay Ferry Road to Vogel Road)
- Starling Airport Road (Jeffco Boulevard to Manufacturers Road)

The Minor Collectors are:

- Tenbrook Road (Arnold Tenbrook Road to Telegraph Road)

This activity score is given to sidewalk located along the stated routes based on street classification.

Street Classification	Point Value
Principal Arterial	10
Minor Arterial	10
Major Collector	7
Minor Collector	5
Local/Residential	0

Table A8: Street Classification Activity Score

A.6.8 High Density Housing

High density housing includes large apartment complexes and senior living facilities. High density housing includes large populations living in closer proximity than single families housing complexes. Although aging is not legally listed as a disability, disabilities rise with increased age. Seniors who travel by foot are more susceptible to tripping hazards and other impedances. The high-density housing activity factors in Arnold includes:

- Fox Chase Apartments, 700 Fox Chase
- Meadowview Memory Care, 100 Woodland Meadows Drive
- Oak Ridge Parkway
- Richardson Place Apartments, 1905 Richardson Road
- Avion Ridge Apartments, 1778 Richardson Road #6016
- Bayshore Village
- Meramec Valley Apartments, 206 Meramec Valley
- Crosswinds Drive
- Cedarhurst of Arnold, 2069 Missouri State Road
- Ozark Mobile Home Park, 2464 Cedar Lane
- Starling Mobile Home Park, Starling Community Trailer Court

This activity score is assigned based on the radial distance to the traffic generators.

Proximity to Traffic Generators	Point Value
< 1/10 mile	5
1/10 mile – 1/4 mile	3
> 1/4 mile	0

Table A9: High Density Housing Activity Score

A.7 Accessibility Scores

A.7.1 Sidewalk Accessibility Score

The following 4 criteria were collected at each sidewalk segment. The point values for each unique deficiency are listed below and used in the equation list in Section 6.5. The lower the point value the greater the impact on pedestrian traffic.

A.7.1.1 Surface

Surface is the existing wearing material of the sidewalk. When sidewalk is not present, pedestrians are forced to either travel in the travel lanes of the adjacent roadway or walk in the grass. This can lead to hazardous pedestrian motor vehicle interactions as well as uneven walking surfaces. When no surface is present it is almost impossible for someone with a mobility disability to safely travel.

Surface	Point Value
None Present	1
Asphalt	1
Brick	1
Wood	1
Concrete	10

Table A10: Sidewalk Surface Activity Score

A.7.1.2 Sidewalk Width

Sidewalk Width: Narrow sidewalks limit the mobility of pedestrian on the pedestrian circulation path. This can lead to a dangerous passing especially when wheelchairs or walkers are involved. Sidewalk width requirements vary based on the presence of a green space between the roadway and the sidewalk so point values were assigned based on the clearance between the sidewalk and the adjacent roadway.

Sidewalk Width (w greenspace)	Point Value
< 4'	1
48"	6
4' - 5'	10
5' - 6'	10
>6'	10

Sidewalk Width (w/o greenspace)	Point Value
< 4'	1
48"	1
4' - 5'	1
5' - 6'	10
>6'	10

Table A11: Sidewalk Width Activity Score

A.7.1.3 Cross Slope

Cross slope is the slope measured perpendicular to the direction of travel. A cross slope of greater than 2% can make it difficult for wheelchairs to maintain lateral balance especially in downhill conditions.

Cross Slope	Point Value
> 5%	1
3% - 5%	3
2% - 3%	6
<2%	8

Table A12: Sidewalk Cross Slope Activity Score

A.7.1.4 Running Slope

The running slope of a sidewalk is the slope parallel to the direction of travel. According to PROWAG standards the running slope can match the running slope of the adjacent roadway, however if the sidewalk running slope does not match the adjacent roadway running slope the slope can be a maximum of 5%. A steep running slope can cause wheelchairs to become unstable and difficult to control.

Running Slope	Point Value
>5%	1
<5%	2
Running slope matches road grade	2

Table A13: Sidewalk Running Slope Activity Score

A.7.2 Sidewalk Obstruction Score

The following 4 criteria were assigned to each obstruction observed in the field to describe the limiting factor of the various obstructions. The point values for each unique deficiency is listed below and used in the equation list in Section 6.5. The higher the point value the greater the impact on pedestrian traffic.

A.7.2.1 Vertical Displacement

Vertical displacements are the abrupt grade changes between two adjacent sidewalk panels. These changes are often caused by sidewalk settling and tree roots. Vertical Displacements are tripping hazards and especially dangerous to those in wheelchairs, walkers, and the elderly.

Vertical Displacement	Point Value
>1"	5
1/2" - 1"	3
1/4" - 1/2"	1

Table A14: Vertical Displacement Obstruction Score

A.7.2.2 Driveway Slope thru Sidewalk

While the cross slope of a sidewalk segment may meet the standards of ADA compliance at the endpoints, often where a driveway crosses a sidewalk the cross slope of the sidewalk follows the driveway slope. A cross slope of greater than 2% can make it difficult for wheelchairs to maintain lateral balance and sudden changes in cross slope may be difficult for the elderly and the visual disabled.

Driveway Cross Slope	Point Value
>8%	10
5% - 8%	7
3% - 5%	4
2% - 3%	1

Table A15: Driveway Slope thru Sidewalk Obstruction Score

A.7.2.3 Clear Width

The clear width is the width of sidewalk surface available for a pedestrian to navigate around an obstacle. The obstacle could be anything from a utility pole and traffic sign to overgrown shrubbery. Although a sidewalk width can meet the minimum ADA standards, if a section of the segment does not meet the minimum width requirement the whole segment is effectively not accessible to a pedestrian specifically those in wheelchairs.

Clear Width	Point Value
<4'	10
>/= 4'	0

Table A16: Clear Width Obstruction Score

A.7.2.4 Driveway Ramp Slope

Where the sidewalk has to slope down for a driveway the running slope of the sidewalk varies from the running slope of the roadway. A running slope on a driveway ramp of greater than 8% can make it difficult for wheelchair users to safely stop if a motor vehicle is in the driveway, while a driveway ramp of greater than 8% can make it difficult for a wheelchair user to navigate the uphill grade with significant exertion.

Driveway Ramp Slope	Point Value
>15%	10
12% - 15%	8
10% - 12%	6
8% - 10%	4

Table A17: Driveway Ramp Slope Obstruction Score

A.7.3 Curb Ramp Accessibility Score

The following 11 criteria were collected at each curb ramp. The point values for each unique deficiency is listed below and used in the equation list in Section 6.5. The lower the point value the greater the impact on pedestrian traffic.

A.7.3.1 Curb Ramp Type

When a sidewalk intersects with a curb and curb cut should be provided per ADA regulations. When a curb cut is not provided to provide access from the sidewalk to the adjacent roadway corridor pedestrians are discriminated against, this is considered the highest priority for improvements. **The Curb Ramp Score will vary between 1 and 2 and if no curb ramp is present none of the subsequent deficiencies will be taken into account with the scoring.**

Curb Ramp Type	Point Value
No Ramp Present	1
All Other Ramp Types	For Information Only

Table A18: Curb Ramp Type Score

A.7.3.2 Fixed Obstructions

Fixed obstructions range from utility poles and fire hydrants to wide street signs and low-hanging branches. Fixed Obstructions can limit the clear width of a curb ramp as well as being hazardous to visually impaired pedestrians. A clear width of less than 4' is considered hazardous. Other fixed obstructions including vertical displacement and broken sidewalks that do not limit the curb ramp to a clear width of less than 4 feet are classified under other deficiencies within the Curb Ramp Accessibility Score. **The Curb Ramp Score will vary from 2 to 4, and if a fixed obstruction is present none of the subsequent deficiencies will be taken into account with the scoring.**

Fixed Obstructions	Point Value
Present – Fixed Obstruction	2
Present – Encroachment	For Information Only

Table A19: Curb Ramp Fixed Obstructions Score

A.7.3.3 Running Slope

The running slope is the slope parallel to the direction of travel. A steep running slope can cause a wheelchair to lose control or cause the wheels to get stuck at the bottom of the ramp due to the gradient change.

Running Slope	Point Value
>15%	1
12% - 15%	2
8% - 12%	3
<8%	5

Table A20: Curb Ramp Running Slope Score

A.7.3.4 Cross Slope

The cross slope is the slope perpendicular to the direction of travel. On a curb ramp a steep cross slope can cause the user to lose balance.

Cross Slope	Point Value
>5%	1
3% - 5%	2
2% - 3%	3
<2%	5

Table A21: Curb Ramp Cross Slope Score

A.7.3.5 Flare Slope

The flare slope is the slope between the curb ramp and the sidewalk panel or green space besides the curb ramp. If this slope is in the pedestrian circulation path the slope must be less than 10%. Slopes greater than 10% can be a challenge to navigate and can lead to loss of balance. It is possible for the flare slope of a curb ramp to be outside the pedestrian circulation path and therefore the slopes are of no consequence.

Flare Slope	Point Value
> 10%	1
</= 10%	2
Outside of Pedestrian Circulation Path	2

Table A22: Curb Ramp Flare Slope Score

A.7.3.6 Curb Ramp Width

Narrow curb ramps limit the mobility of pedestrians and can lead to a dangerous passing especially when wheelchairs or walkers are involved.

Curb Ramp Width	Point Value
<4'	1
4' - 6'	5
6' - 8'	5
>8'	5

Table A23: Curb Ramp Width Score

A.7.3.7 Gutter Slope

A steep gutter slope leads to a sharp transition from the curb ramp to the pavement. This can lead to wheelchair and walker wheels catching as well as a generally uncomfortable walking situation.

Gutter Slope	Point Value
Rolled Curb	1
>8%	5
5% - 8%	7
<5%	10

Table A24: Curb Ramp Gutter Slope Score

A.7.3.8 Detectable Warning Panels

Detectable warning panels inform the visually impaired that they are approaching a dangerous condition and hazard is warranted. On perpendicular and parallel curb ramps, they also guide the visually impaired as to the direction of the opposing curb ramp across the roadway.

Detectable Warning Panels	Point Value
Not Present	1
Concrete Mesh	1
Not Compliant	1
Truncated Pavers	1
Truncated Domes	4

Table A25: Curb Ramp Detectable Warning Panels Score

A.7.3.9 Vertical Displacements

The transition between the curb ramp and gutter pan and the curb ramp and the landing needs to be flush due to the potential for tripping hazards. Due to the steep slopes common on curb ramps it is more likely that the pedestrian can lose his/her balance and fall.

Vertical Displacements	Point Value
>1"	1
1/2" – 1"	2
1/4" – 1/2"	5
<1/4"	8

Table A26: Curb Ramp Vertical Displacements Score

A.7.3.10 Landing Dimensions

The landing at the top of a diagonal or perpendicular curb ramp provides a safe location for a pedestrian to change direction. The landing at the bottom of the curb ramp provides protection for the pedestrian from motorists.

Landing (Top or Bottom)	Point Value
<4' in each direction	1
>/= 4' in each direction	3

Table A27: Curb Ramp Landing Dimensions Score

A.7.3.11 Landing Slopes

The slopes at the top landing need to meet ADA requirements in both directions due to the large number of turning movements. Steep slopes in either direction could cause a wheelchair to lose balance and affect the stability of all pedestrian especially the elderly.

Top Landing Slope	Point Value
>2% in either direction	1
</= 2% in either direction	3

Table A28: Curb Ramp Landing Slope Score

A.7.3.12 Drainage Problems

The area surrounding the ramp should be clear of any drainage issues that could cause the ramp to be deemed unusable after or during rainfall. Collections of water could leave debris that would block the ramp or cause a tripping hazard,

Drainage Area around Ramp	Point Value
Problems	1
No Problems	5

Table A29: Curb Ramp Drainage Problems Score

A.7.4 Pedestrian Signal Accessibility Score

The following 11 criteria were collected at each pedestrian signal. The pedestrian signals are classified as either compliant or not since the pedestrian signals will most likely only be updated during future signal improvements and an individual project to update the existing pedestrian signals is unlikely. Every traffic signal at an intersection that also have pedestrian travel movements should be upgraded with the most current pedestrian signals at the time of upgrades.

A.7.4.1 Distance from Curb Line

The horizontal distance between the pedestrian push button and the curb line. When the pedestrian push button is closer than 1.5 feet from the curb line there is a potential conflict between motorist and pedestrians.

Distance from curb line	Compliance Level
Less than 1.5 feet from curb line	Non-compliant
1.5 feet to 6 feet from curb line	Compliant
Greater than 6 feet from curb line	Compliant

Table A29: Pedestrian Signal – Distance from the Curb Line

A.7.4.2 Pedestrian Push Button Height

The height of the pedestrian push button from the adjacent sidewalk pavement to the center of the pedestrian push button. When a pedestrian push button is mounted either too high or too low it can be difficult to access for certain users including pedestrians in a wheelchair.

Pedestrian push button height	Compliance Level
Less than 3.5 feet from adjacent pavement	Non-compliant
3.5 feet to 4 feet from adjacent pavement	Compliant
Greater than 4 feet from adjacent pavement	Non-compliant

Table A30: Pedestrian Signal – Pedestrian Push Button Height

A.7.4.3 Pedestrian Detector

Indicates the presence of pedestrian push button or some other method to activate the walk interval.

Pedestrian detector	Compliance Level
Pushbuttons	Compliant
Passive detection	Compliant
No detection present	Non-compliant

Table A31: Pedestrian Signal – Pedestrian Detector

A.7.4.4 Non-Visual Aids

Indicates the presence of a non-visual method to alert pedestrians to the presence of a pedestrian push button or some other method to activate the walk interval. A non-visual aid provides guidance to pedestrians who are either low vision or blind.

Non-visual aids	Compliance Level
Audible tones	Compliant
Vibrating surfaces	Compliant
None present	Non-compliant

Table A32: Pedestrian Signal – Non-Visual Aids

A.7.4.5 Clear Space Widths

The width of the landing for the pedestrian push button. A landing of less than 4 feet by 4 feet does not provide adequate space for someone in a wheelchair to activate the pedestrian push button.

Clear space widths	Compliance Level
Less than 4 feet by 4 feet	Non-compliant
4 feet by 4 feet to 5 feet by 5 feet	Compliant
Greater than 5 feet by 5 feet	Compliant

Table A33: Pedestrian Signal – Clear Space Widths

A.7.4.6 Clear Space Slopes

The slope of the landing for the pedestrian push button in all directions. Steep slopes in either direction could cause a wheelchair to lose balance and affect the stability of all pedestrian especially the elderly.

Clear space slopes	Compliance Level
Less than or equal to 2 percent	Compliant
Greater than 2 percent	Non-compliant

Table A34: Pedestrian Signal – Clear Space Slopes

A.7.4.7 Distance from the Pedestrian Push Button to the Crosswalk

The proximity of the pedestrian push button to the crosswalk that the pedestrian push button services. When a pedestrian push button is too far away from the crosswalk it can be a challenge for a pedestrian with limited mobility to travel from the pedestrian push button to the crosswalk in time to safely travel across the street.

Distance from the pedestrian push button to the crosswalk	Compliance Level
Less than 5 feet	Compliant
Greater than 5 feet	Non-compliant

Table A35: Pedestrian Signal – Distance from the Pedestrian Push Button to the Crosswalk

A.7.4.8 Pedestrian Push Button Proximity

The proximity of the pedestrian push button to each other. When pedestrian push buttons are near each other audible tones or other non-visual aids are required to differentiate pedestrian push buttons from other push buttons that may be activated and near.

Pedestrian push button proximity	Compliance Level
Less than 10 feet	Compliant
Greater than 10 feet	Compliant

Table A36: Pedestrian Signal – Pedestrian Push Button Proximity

A.7.4.9 Operating Force

The amount of force necessary to activate the pedestrian push button. When the operating force is too heavy it can be difficult for some pedestrians to activate the pedestrian signal.

Operating force	Compliance Level
Less than 5 pounds	Compliant
Greater than 5 pounds	Non-compliant

Table A37: Pedestrian Signal – Operating Force

A.7.4.10 Countdown Signals

Does the pedestrian signal include countdown signals during the walk interval. When countdown signals are not provided a pedestrian cannot accurately judge the amount of time to cross a street.

Countdown signals	Compliance Level
Present	Compliant
Not present	Non-compliant

Table A38: Pedestrian Signal – Countdown Signals

A.7.4.11 Alternative Name Format

Indicated the street to be crossed in an alternative format (e.g., braille or verbal). Alternative formats provide wayfinding options to all pedestrians.

Alternative name format	Compliance Level
Present	Compliant
Not present	Non-compliant

Table A39: Pedestrian Signal – Alternative Name Format

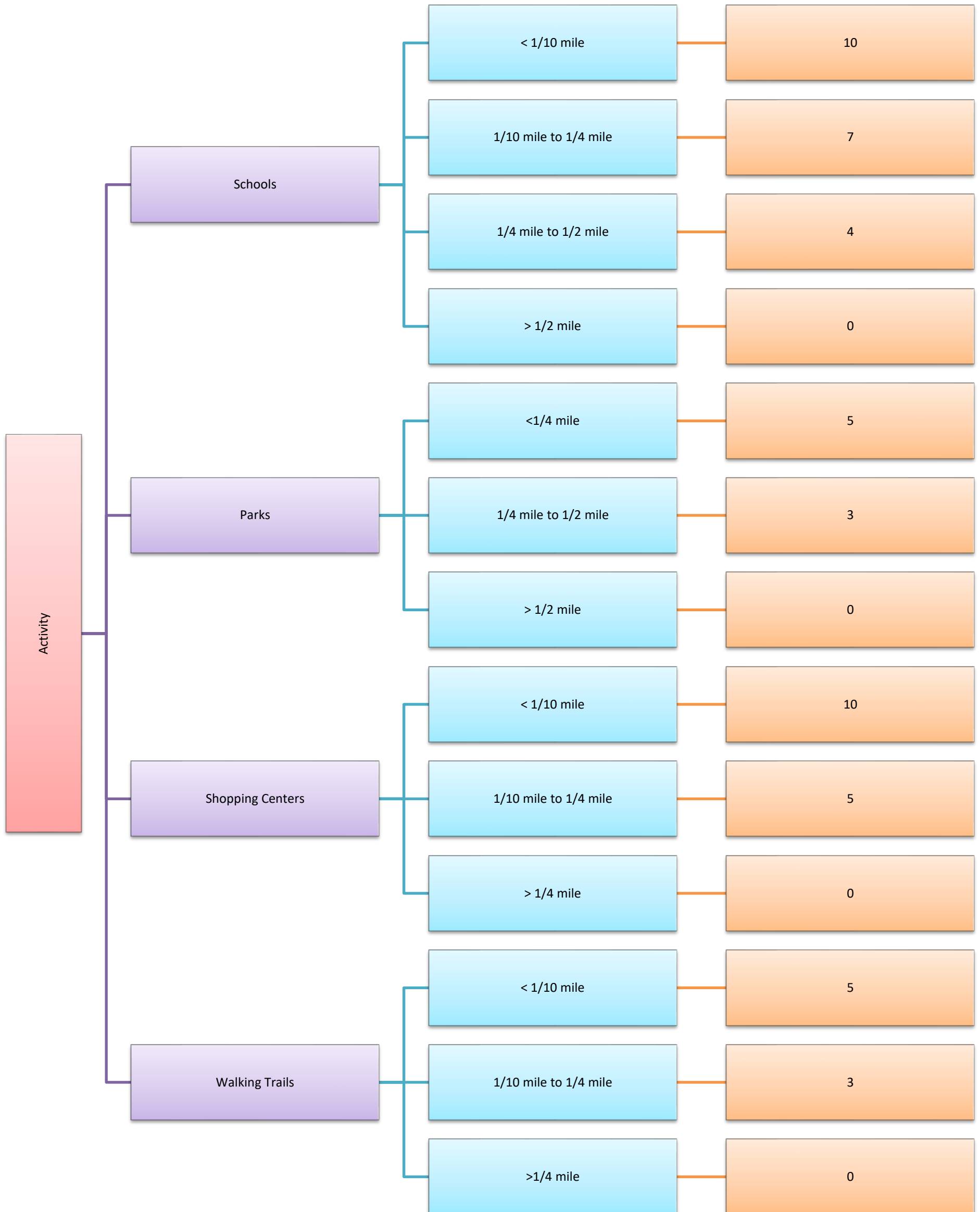
Appendix A.8

Data Collection Matrixes

ACTIVITY FACTOR FLOW CHART (SHEET 1)

Max Score 65 Points

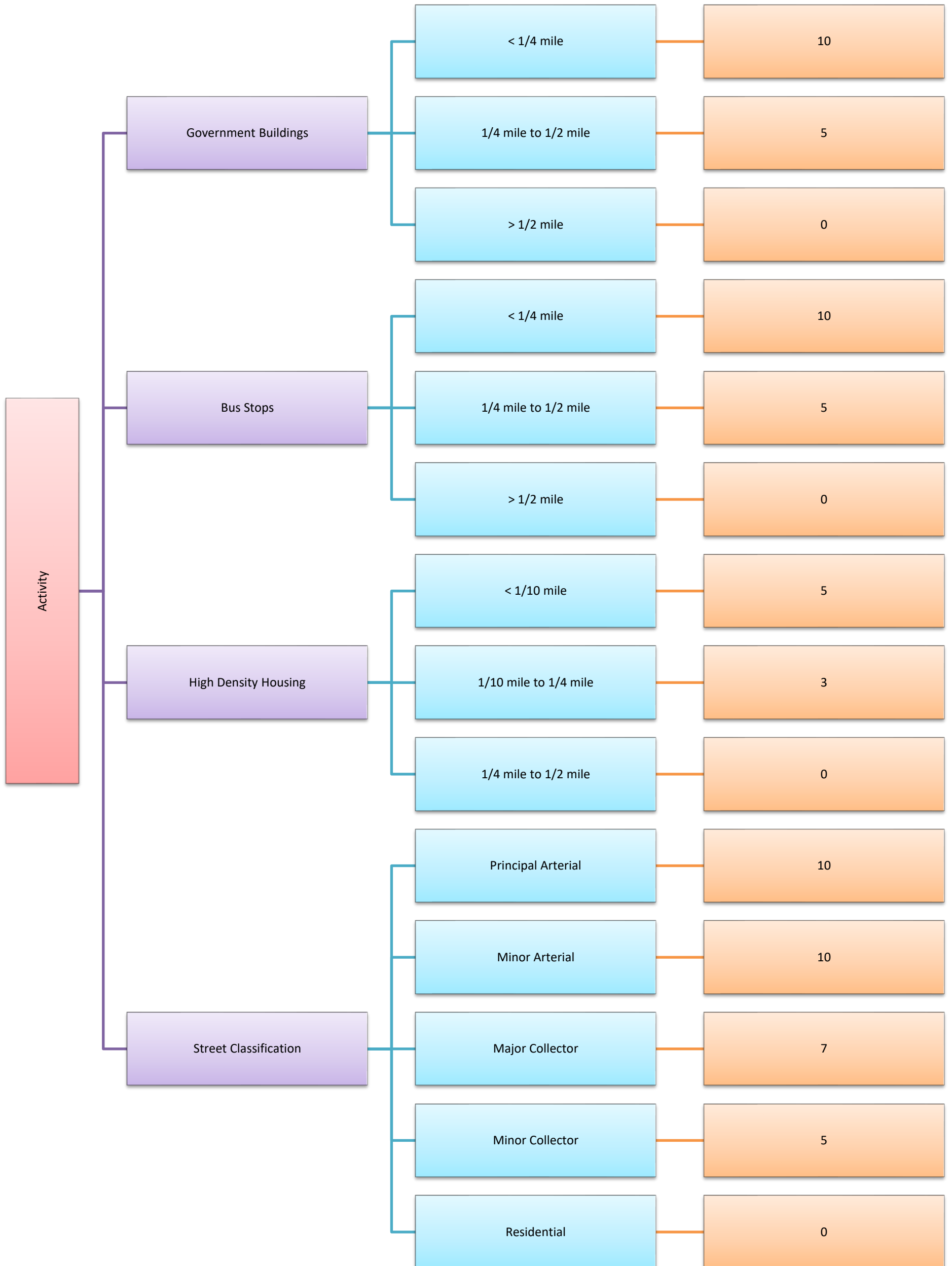
The following is a graphical representation of the pedestrian traffic generators and socio-economic data that are used to develop the city-wide prioritization map. The nodes directly right of "Activity" (i.e. Schools, Parks, seniors, etc.) represents the various pedestrian generating activities. The data to the right of the various pedestrian generating activities (i.e. <math>< \frac{1}{10}</math> mile, $\frac{1}{4}$ mile to $\frac{1}{2}$ mile, etc.) represents the distance between the various sidewalk segments or curb ramps from the activity. The data to the right of the buffer distances represents the point value that will be assigned based on the segment or ramps distance from the various activities. These points add up to a maximum of one hundred forty points.



ACTIVITY SCORE FLOW CHART (SHEET 2)

Max Score 65 Points

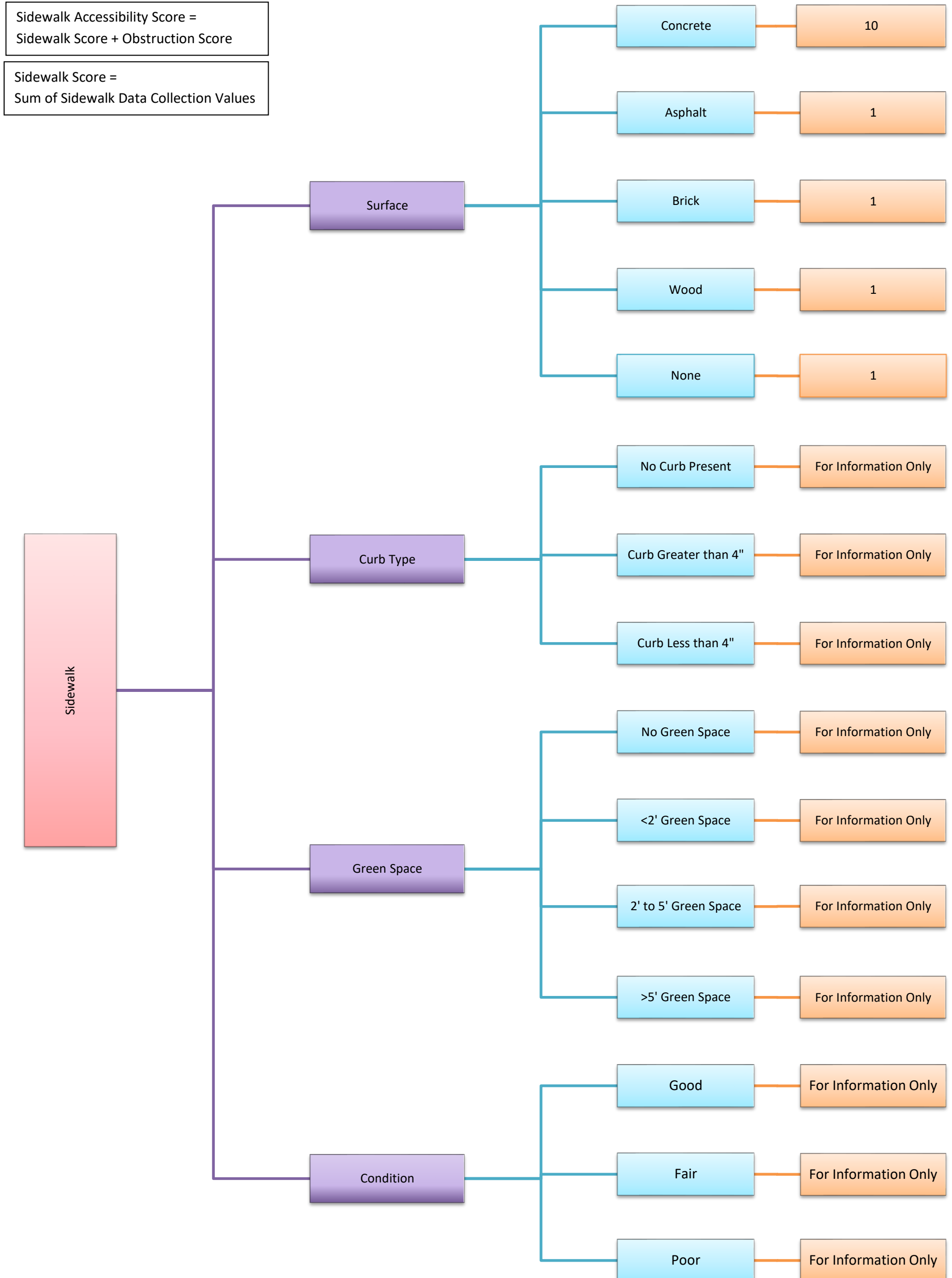
The following is a graphical representation of the pedestrian traffic generators and socio-economic data that are used to develop the city-wide prioritization map. The nodes directly right of "Activity" (i.e. Schools, Parks, seniors, etc.) represents the various pedestrian generating activities. The data to the right of the various pedestrian generating activities (i.e. $< \frac{1}{10}$ mile, $\frac{1}{4}$ mile to $\frac{1}{2}$ mile, etc.) represents the distance between the various sidewalk segments or curb ramps from the activity. The data to the right of the buffer distances represents the point value that will be assigned based on the segment or ramps distance from the various activities. These points add up to a maximum of one hundred forty points.



SIDEWALK DATA COLLECTION FLOW CHART (SHEET 1)

Max Score 30 points

The following is a graphical representation of the sidewalk data to be collected as part of the transition plan. The main node at the left side of the chart "Sidewalks" represents the feature class for which the data is being collected. The nodes directly right of "Sidewalks" (i.e. Surface, Curb Type, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Concrete, Asphalt, etc.) represents the options that will be presented to the field crew via a drop-down menu. All data to be collected will be based on existing field conditions as of the time of surveying except for the condition assessment which will be based on the physical appearance of the overall sidewalk segment.



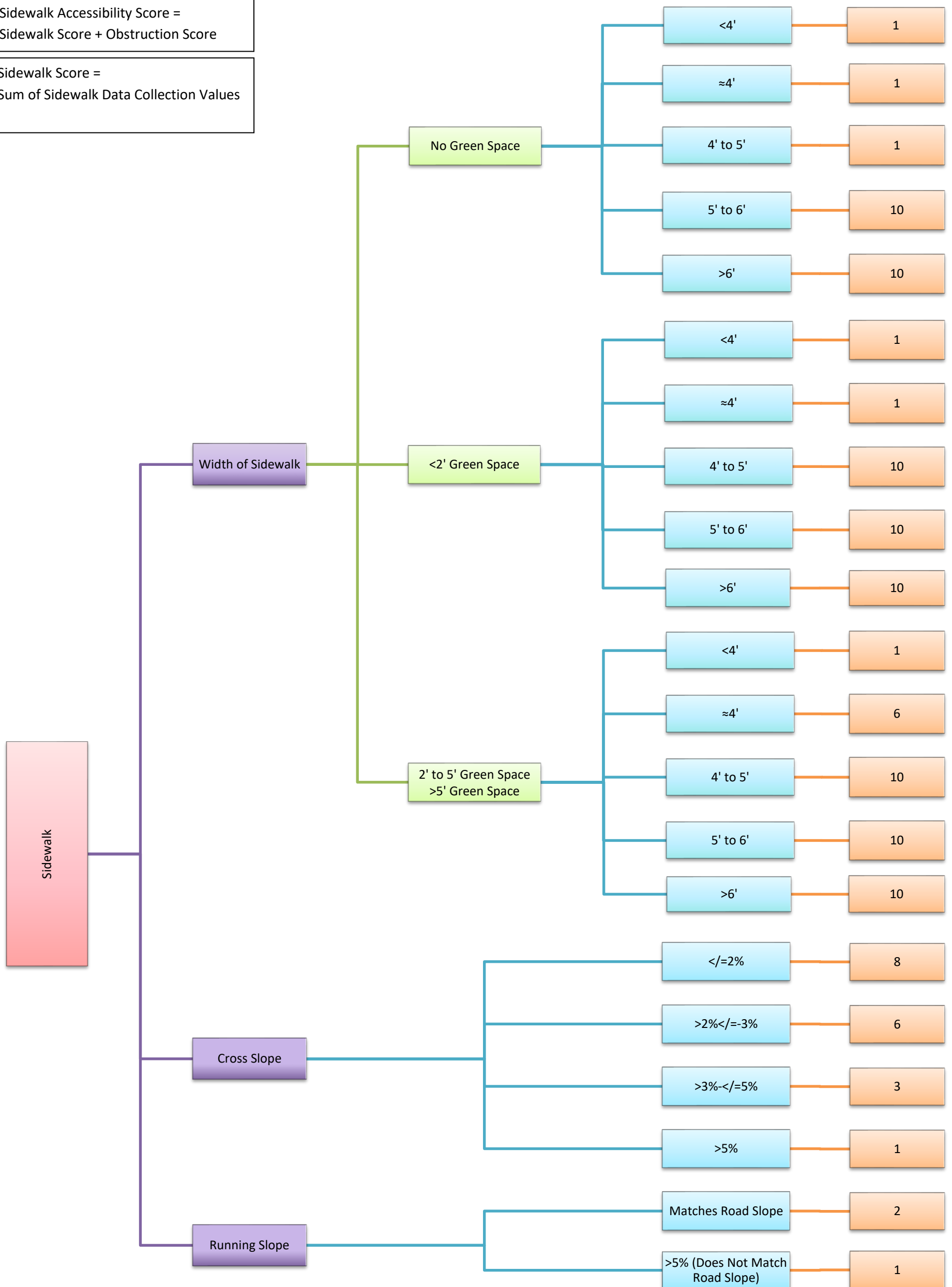
SIDEWALK DATA COLLECTION FLOW CHART (SHEET 2)

Max Score 30 points

The following is a graphical representation of the sidewalk data to be collected as part of the transition plan. The main node at the left side of the chart "Sidewalks" represents the feature class for which the data is being collected. The nodes directly right of "Sidewalks" (i.e. Surface, Curb Type, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Concrete, Asphalt, etc.) represents the options that will be presented to the field crew via a drop-down menu. All data to be collected will be based on existing field conditions as of the time of surveying except for the condition assessment which will be based on the physical appearance of the overall sidewalk segment.

Sidewalk Accessibility Score =
Sidewalk Score + Obstruction Score

Sidewalk Score =
Sum of Sidewalk Data Collection Values

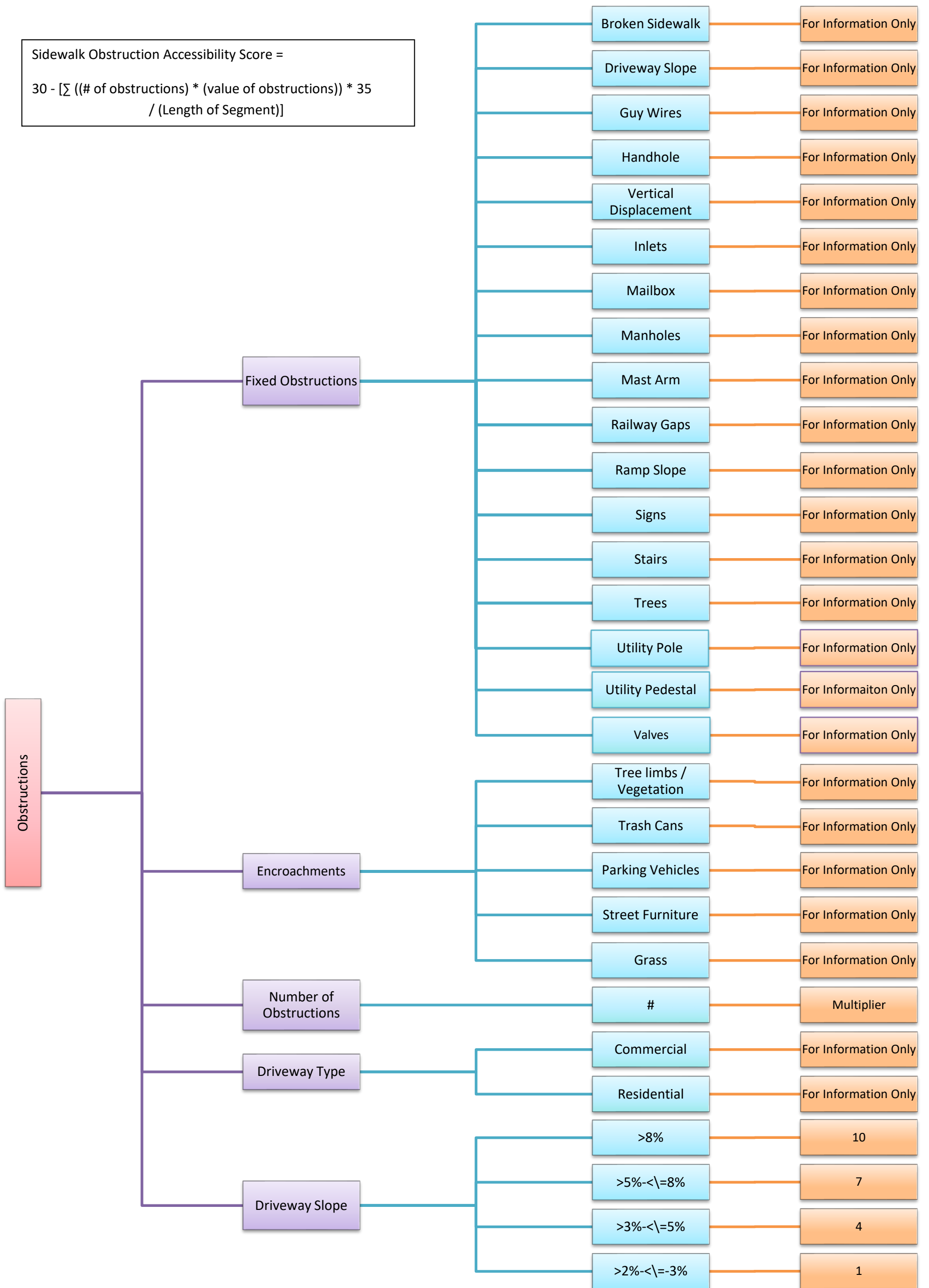


OBSTRUCTIONS DATA COLLECTION FLOW CHART (SIDEWALK SEGMENTS) SHEET 1

Max Score 30 Points

The following is a graphical representation of the obstruction data to be collected as part of the transition plan. The main node at the left side of the chart “Obstructions” represents feature for which the data is being collected. The nodes directly right of “Obstructions” (i.e. Fixed Obstructions, Driveway Slope, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Inlets, Mast Arm, etc.) represents the options that will be presented to the field crew via a drop-down menu.

$$\text{Sidewalk Obstruction Accessibility Score} = 30 - \left[\frac{(\# \text{ of obstructions}) * (\text{value of obstructions}) * 35}{(\text{Length of Segment})} \right]$$

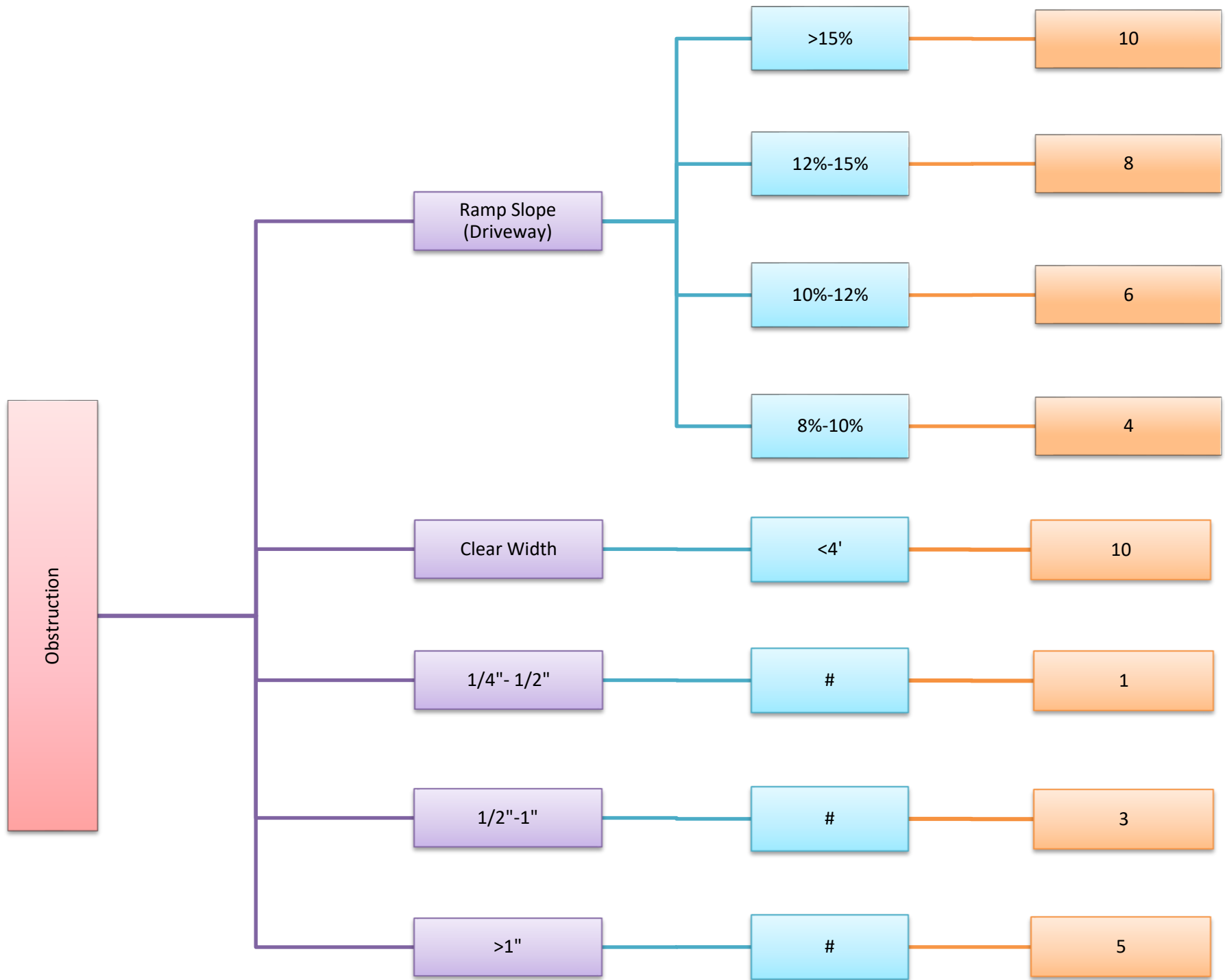


OBSTRUCTIONS DATA COLLECTION FLOW CHART (SIDEWALK SEGMENTS) SHEET 2

Max Score 30 Points

The following is a graphical representation of the vertical displacement data to be collected as part of the transition plan. The main node at the left side of the chart "Vertical Displacement" represents feature for which the data is being collected. The nodes directly right of "Vertical Displacements" (i.e. Displacement caused by trees, Broken sidewalks etc.) represents the attributes that will be collected. The data right of the attribute nodes represents the options that will be presented to the field crew via a drop-down menu.

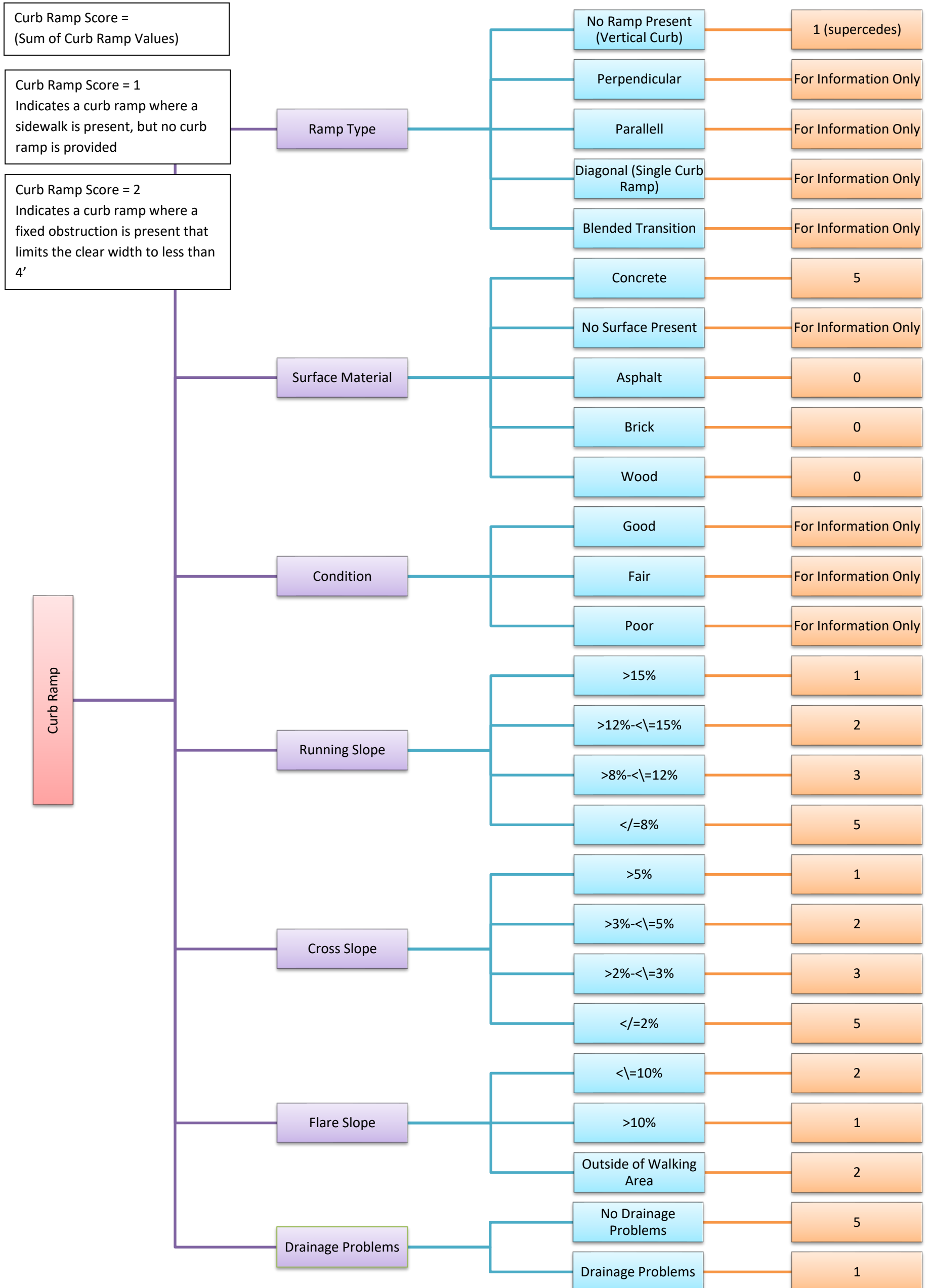
$$\text{Sidewalk Obstruction Accessibility Score} = 30 - \left[\frac{(\# \text{ of obstructions}) * (\text{value of obstructions})}{(\text{Length of Segment})} \right] * 35$$



CURB RAMP DATA COLLECTION FLOW CHART (SHEET 1)

Max Score 55 points

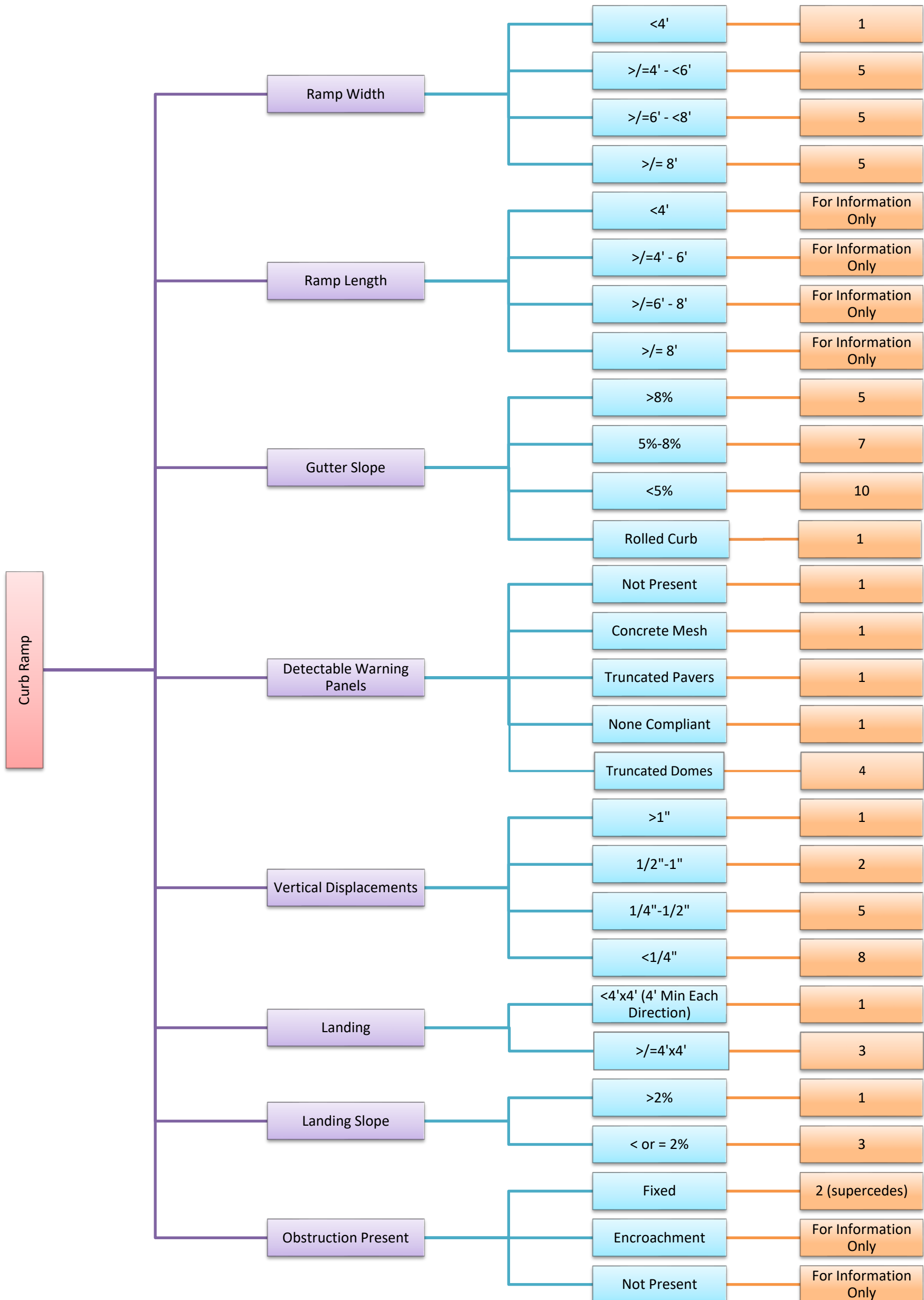
This is the first sheet of curb ramp data. Curb ramps were divided into 3 sheets to provide clarity. The following is a graphical representation of the curb ramp data to be collected as part of the assessment of the pedestrian assets of public rights-of-way. The main node at the left side of the chart "Curb Ramps" represents the feature for which the data is being collected. The nodes directly right of "Curb Ramps" (i.e. Surface, Condition, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Concrete, Asphalt, etc.) represents the various options that will be presented to the field crew via drop-down menu.



CURB RAMP DATA COLLECTION FLOW CHART (SHEET 2)

Max Score 55 points

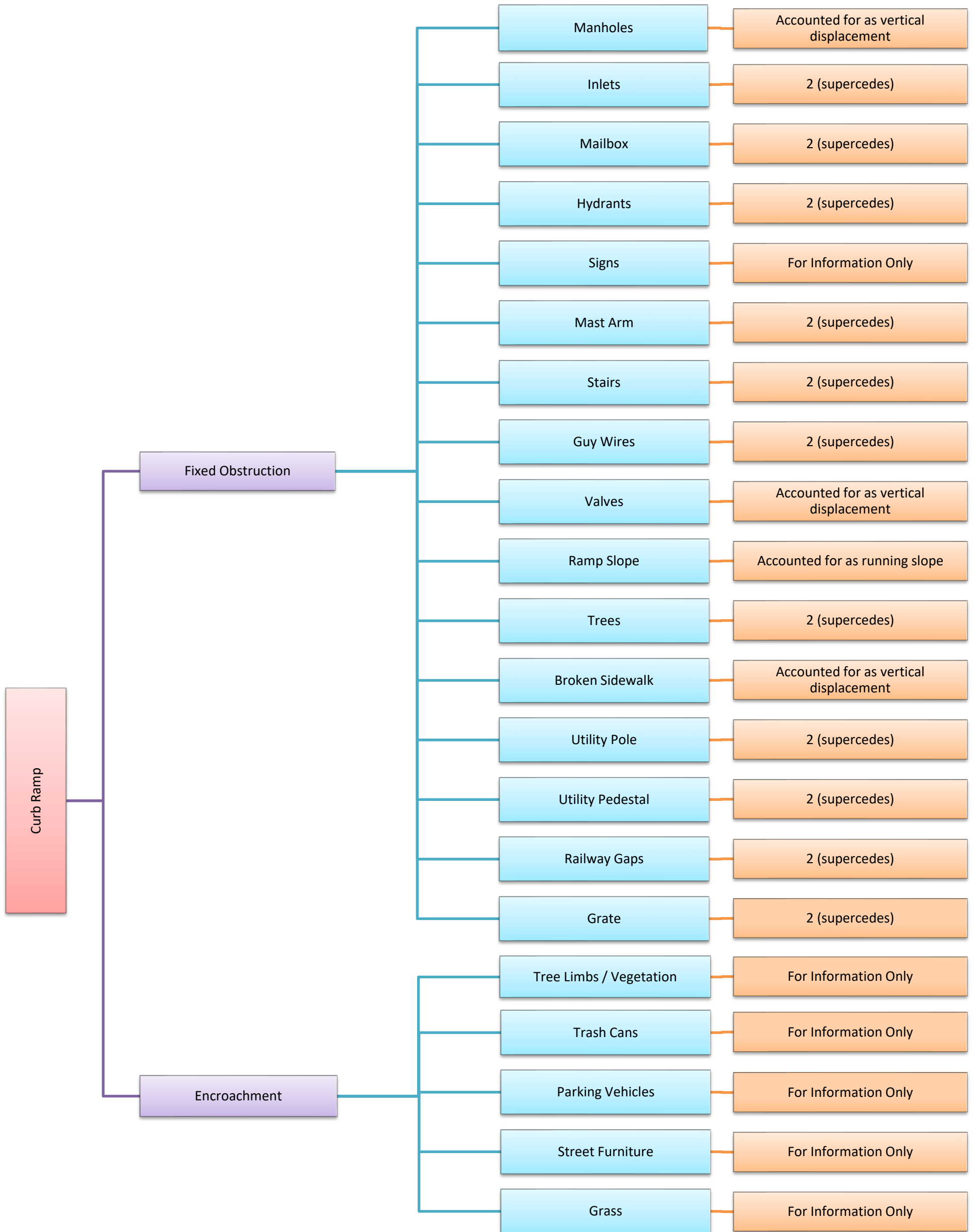
This is the second sheet of curb ramp data. Curb ramps were divided into 3 sheets to provide clarity. The following is a graphical representation of the curb ramp data to be collected as part of the transition plan. The main node at the left side of the chart "Curb Ramps" represents the feature for which the data is being collected. The nodes directly right of "Curb Ramps" (i.e. Surface, Condition, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Concrete, Asphalt, etc.) represents the various options that will be presented to the field crew via drop-down menu.



CURB RAMP DATA COLLECTION FLOW CHART (SHEET 3)

Max Score 55 points

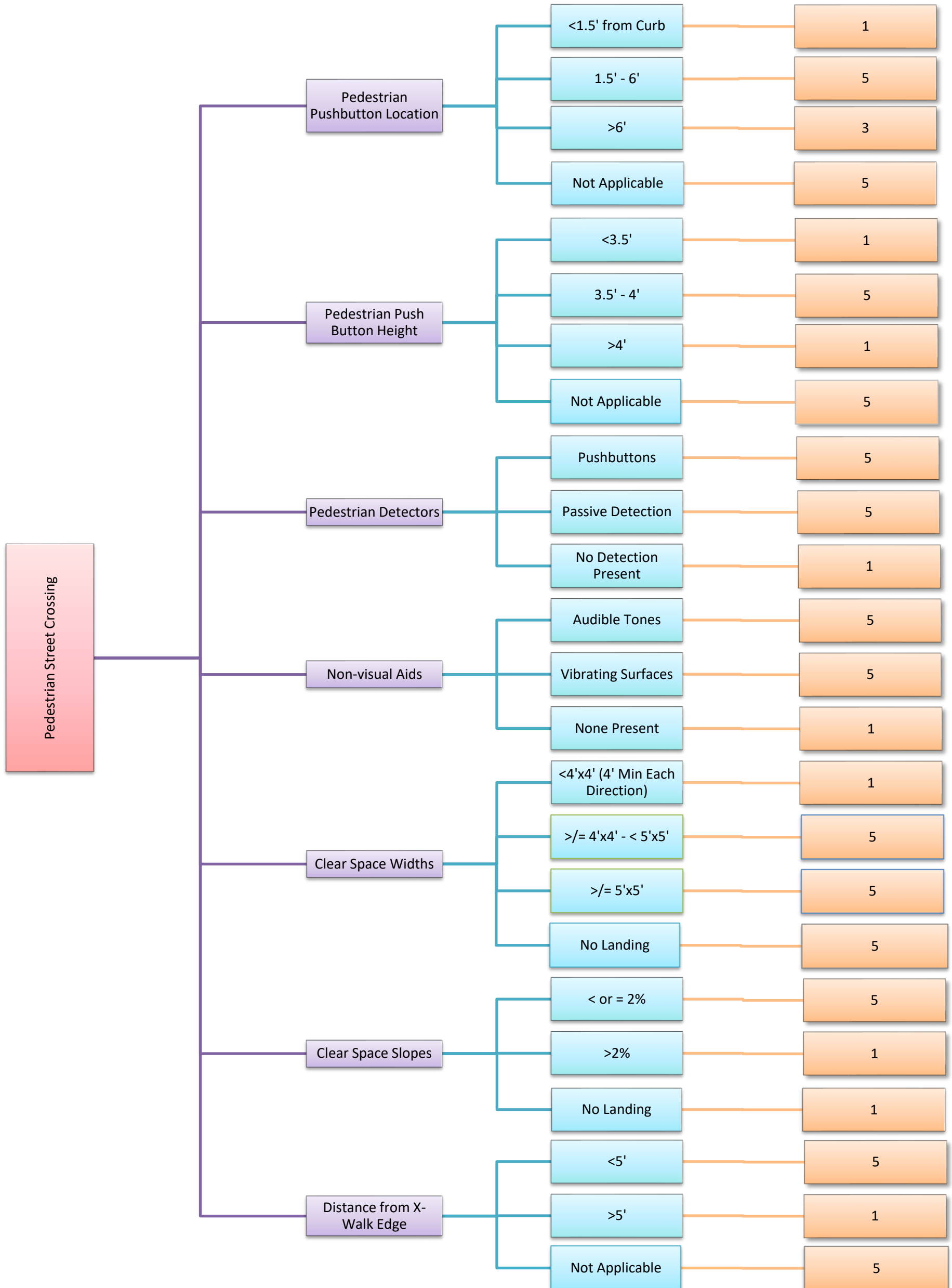
This is the third sheet of curb ramp data. Curb ramps were divided into 3 sheets to provide clarity. The following is a graphical representation of the curb ramp data to be collected as part of the transition plan. The main node at the left side of the chart "Curb Ramps" represents the feature for which the data is being collected. The nodes directly right of "Curb Ramps" (i.e. Surface, Condition, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Concrete, Asphalt, etc.) represents the various options that will be presented to the field crew via drop-down menu.



SIGNALIZED INTERSECTION PEDESTRIAN STREET CROSSING DATA COLLECTION FLOW CHART (SHEET 1)

Max Score 60 points

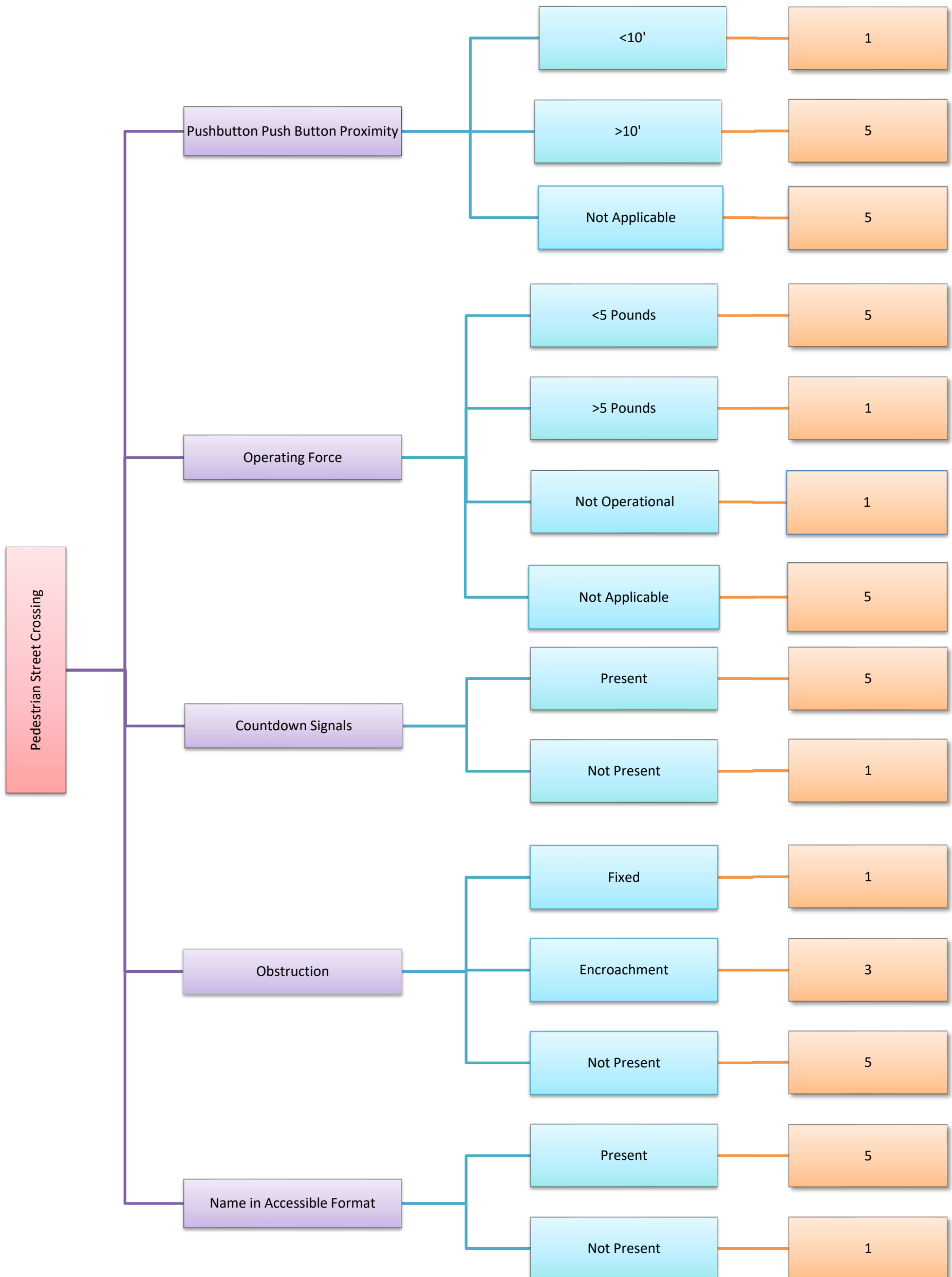
The following is a graphical representation of the signalized intersection pedestrian street crossing data to be collected as part of the transition plan. The main node at the left side of the chart “Pedestrian Street Crossing” represents the feature for which the data is being collected. The nodes directly right of “Pedestrian Street Crossing” (i.e. Clear Space Widths, Clear Space Slopes, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Audible Tones, Vibrating Surfaces, etc.) represents the various options that will be presented to the field crew via drop-down menu. Attributes are



SIGNALIZED INTERSECTION PEDESTRIAN STREET CROSSING DATA COLLECTION FLOW CHART (SHEET 2)

Max Score 60 points

The following is a graphical representation of the signalized intersection pedestrian street crossing data to be collected as part of the transition plan. The main node at the left side of the chart “Pedestrian Street Crossing” represents the feature for which the data is being collected. The nodes directly right of “Pedestrian Street Crossing” (i.e. Clear Space Widths, Clear Space Slopes, etc.) represents the attributes that will be collected. The data right of the attribute nodes (i.e. Audible Tones, Vibrating Surfaces, etc.) represents the various options that will be presented to the field crew via drop-down menu.



Appendix A.9

Summary of Sidewalk and Curb Ramp Findings

1. MAP ORGANIZATION

A grid system was laid out over the extent of the city. 5 grids detail all the pedestrian facilities in the city. If a section of the City is not covered by a grid, then there are no pedestrian facilities present in that area.

In general, the grids were laid out in relative rows and columns over the city. To better display the information, this pattern was broken in places, and some grids may overlap.

2. MAP SYMBOLOGY

Each grid map is accompanied by a legend as shown below. A score was assigned to each segment of sidewalk and to each curb ramp in the city. The scoring system is a two-part scoring system that is based on both the physical condition of the pedestrian asset, Accessibility Score, and the likelihood of the pedestrian asset having high level of pedestrian foot traffic, Activity Factor.

The Accessibility Score is detailed in Appendix A.7 of the ADA Transition Plan. Sidewalk gaps and existing curb ramps that either have a fixed obstruction that greatly limits the usability of the curb ramp or there is no curb ramp present are automatically categorized as the highest priority regardless of the other physical characteristics of the curb ramp. Sidewalk gaps are defined as small sidewalk gaps where sidewalk is present on both sides of the roadway. Sidewalk gaps that exist for an entire city block or greater are not considered sidewalk gaps for the purpose of the ADA Transition Plan.

The lower the Accessibility Score the higher the priority. High priority pedestrian assets are those pedestrian facilities that are most encumbered by ADA violations. For instance, a segment of sidewalk that scores a 55 has few obstructions and should be addressed after a segment that scores a 15. A score of 55 does not indicate that a given segment or ramp is ADA compliant, but that the given segment or ramp has a lower impact on access based on the parameters established for this plan. A sidewalk segment or curb ramp is considered "No Significant Deficiency" when the pedestrian asset has only minor ADA deficiencies that do not impact the usability of the pedestrian asset. For sidewalk segments a segment with a score of 60 or greater is considered "No Significant Deficiency". For curb ramps a curb ramp with a score of 70 or greater is considered "No Significant Deficiency".

The Activity Factor is detailed in Appendix A.6 of the ADA Transition Plan. Radii were developed for various pedestrian traffic generators located throughout the city and unique values were given to each radius. Smaller radii near the pedestrian traffic generators were given higher priority of larger radii further away from the pedestrian traffic generators. The pedestrian assets with the highest Activity Factor are those that are near multiple pedestrian traffic generators. These assets represent those locations in the city that are estimated to have the highest amount of pedestrian foot traffic.

The overall prioritization system places the highest priorities (1st Tier Improvements) on those pedestrian assets that have the greatest impact on usability and are likely to have high pedestrian traffic counts. Long Term Priorities are pedestrian assets that are either low priority Accessibility Scores or low priority Activity Factors. The legend shows the categories of scoring and the colors associated with each category (See Figure 1).

		Accessibility Score				
		No Significant Deficiency	Low	Medium	High	Sidewalk Gaps or Existing Sidewalk with No Curb Ramp / Fixed Obstruction
Activity Factor	Low				2 nd	1 st
	Medium			4 th	1 st	1 st
	High			3 rd	1 st	1 st

Priority Legend	
	1st Tier Improvements - Initial Focus
	2nd Tier Improvements
	3rd Tier Improvements
	4th Tier Improvements
	Long Term Priorities - Out Years
	No Significant Deficiency

Figure A1: Color coded scoring legend

3. COST ESTIMATING

A cost estimate of upgrading each curb ramp and sidewalk segment to full ADA compliance was developed for each component. The cost estimate was calculated using an algorithm in ArcGIS that considered all the defects with a given segment or curb ramp.

3.1 Curb Ramps

The curb ramp Accessibility Score is detailed in Appendix A.7.3 of the ADA Transition Plan. This score accounts for all the obstructions that may impede a disabled pedestrian. It was found that, though these obstructions may be repaired individually, the best practice to completely remove and reconstruct the curb ramp except in special circumstances in which a minor obstruction can be removed without doing damage to the remainder of the curb ramp. For this report it was assumed that any curb ramp that does not meet current ADA standards would be removed and reconstructed. Additionally, curb ramps that included fixed obstructions that will require relocation of an existing utility (such as mast arms) were deemed to require full removal and replacement of the existing curb ramp in addition to the cost required to repair or relocate the fixed obstruction.

Once all the curb ramps to be replaced were established, a cost was assigned to each. For perpendicular ramps, a cost of \$2,500 was assumed. For parallel ramps, a cost of \$3,000 was assumed. For diagonal ramps, a cost of \$4,000 was assumed to account for constructing two perpendicular ramps to replace the existing diagonal ramp. If the curb ramp was impeded by a utility pedestal, water valve, manhole, or other utility box, the cost of repair was assumed to be the cost to relocate or adjust the existing utility as identified in **Table 39** in addition to the cost to remove and replace the existing curb ramp as identified above. Although some ramps may be able to be modified to fix minor problems, such as a vertical displacement of between $\frac{1}{4}$ " and $\frac{1}{2}$ " that may be ground down, for this plan a cost was assigned to remove and replace the curb ramp to assist in long-term project planning.

3.2 Sidewalk Segments

For the sidewalk segments, the cost was determined by a combination of the physical condition of the sidewalk segment as well as establishing a cost to remove obstruction within a given segment that limit accessibility. In cases where sidewalk is already present it was assumed that the reconstructed sidewalk will be concrete sidewalk of a minimum sidewalk width of 5 feet. In locations where the sidewalk is located directly behind the back of existing curb the cost does not include the removal and replacement of the adjacent concrete curb. The following cost were assigned for removing the various obstructions.

Obstruction Type	Cost
Utility Pole Relocation	\$10,000
Adjust Manholes, Inlets, Valve or Hydrants	\$2,500
Adjust Utility Pedestal	\$10,000
Mast Arm Relocation	\$10,000
Vertical Displacement between ¼ inch and ½ inch	\$750
Vertical Displacement between ½ inch and 1 inch	\$750
Vertical Displacement greater than 1 inch	\$1,000
Vertical Displacement at Inlets	\$1,000
Driveway Cross Slope greater than 8%	\$7,500
Driveway Cross Slope greater than 5% to 8%	\$5,000
Driveway Cross Slope greater than 3% to 5%	\$4,000
Driveway Cross Slope greater than 2% to 3%	\$3,000
Broken Sidewalk Limiting Accessibility	\$750
Sidewalk Running Slope to Driveway exceeds 8%	\$750
Clear Width less than 4 foot	\$75 per LF

Table A39: Cost of Repairing Various Obstructions

Once each obstruction had a cost assigned to it, the cost was divided into two subgroups. The first subgroup, fixed costs, represents the cost to remove and replace driveways or relocating existing utilities that will be incurred regardless of overall sidewalk replacement. The second subgroup, sidewalk replacement costs, represents the cost to remove and replace vertical displacements or broken sidewalks. These costs were summed per sidewalk segment and if this cost exceeded the cost of replacing the sidewalk (at \$75 per linear foot), then the final cost assigned was that of replacing the entirety of the sidewalk segment plus the fixed costs for obstructions. If the cost was less than replacement of the sidewalk, the final cost was given as the cost of repairing each obstruction individually plus the fixed costs for obstructions. The sidewalk was deemed necessary for replacement if the segment’s cross slope was more than 2% or the width of the sidewalk was less than 4-foot wide.

Cost estimates are based on correcting ADA deficiencies. Additional improvements may be desired, but the cost of this work is not included in these estimates. The cost of the improvements is based on 2021 construction dollars and inflation is not included in the development of the cost estimates.

3.3 Pedestrian Traffic Signals

Modifying pedestrian traffic signals to meet applicable ADA standards often involves the addition or relocation of the pedestrian push buttons and additional signal faces. Due to the level of effort to bring the pedestrian traffic signals into compliance, ADA upgrades are often associated with larger intersection improvements. The cost to update the pedestrian signal at a given intersection is \$30,000.

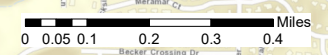
3.4 Development of Potential Projects

Potential standalone ADA improvement projects will be developed based on the prioritization system and in conjunction with other planned city improvements.

Appendix A.10

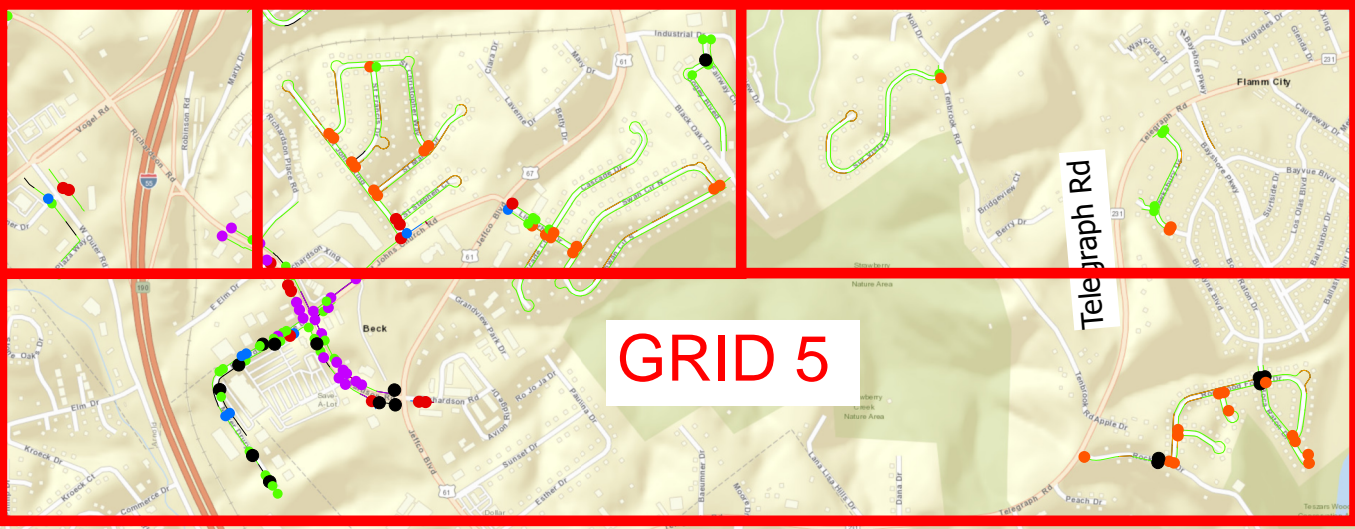
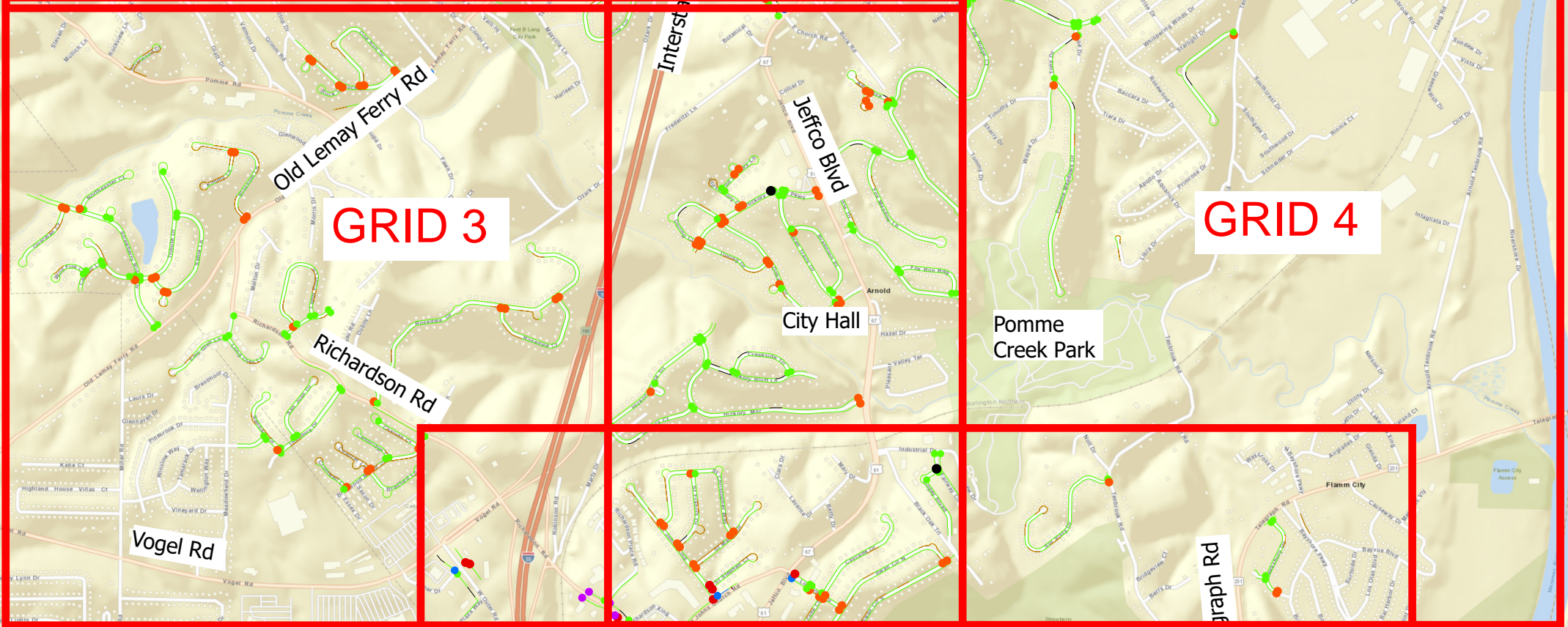
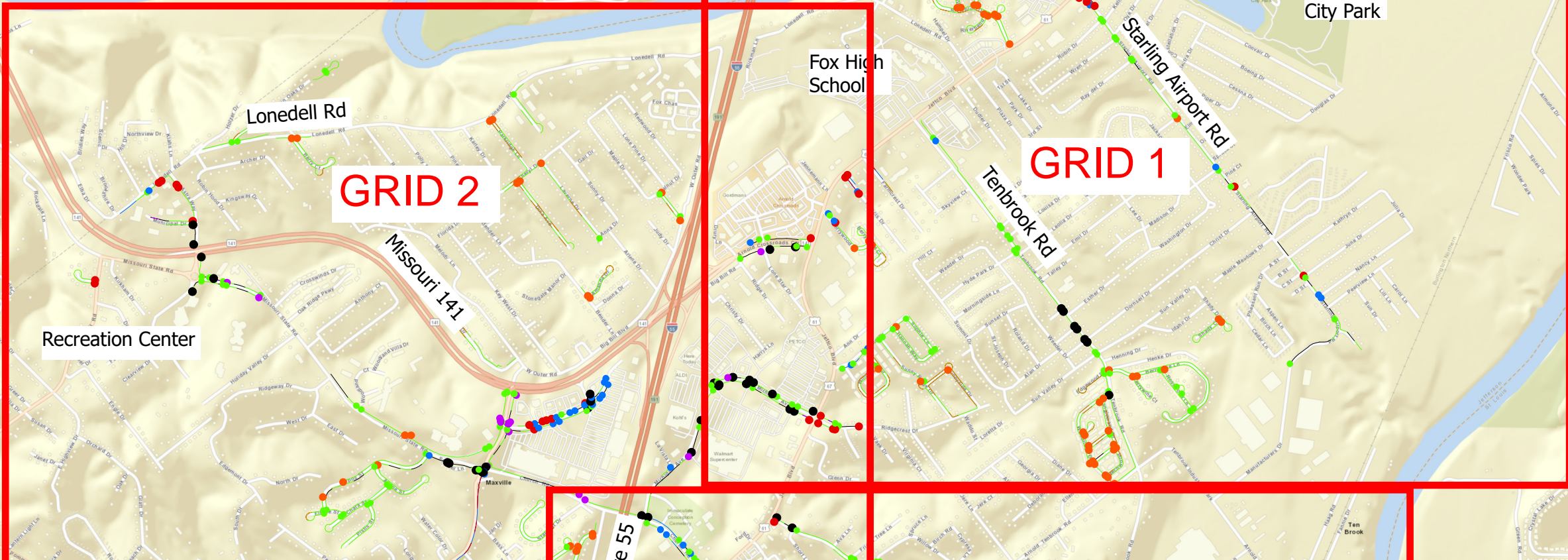
Aerial Exhibits for Sidewalk Segments and Curb Ramps

CITY OF ARNOLD
ADA TRANSITION PLAN
PRIORITIZATION MAP
OVERALL MAP



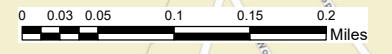
- Curb Ramps Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency
- City Sidewalks Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency

APPENDIX A-36

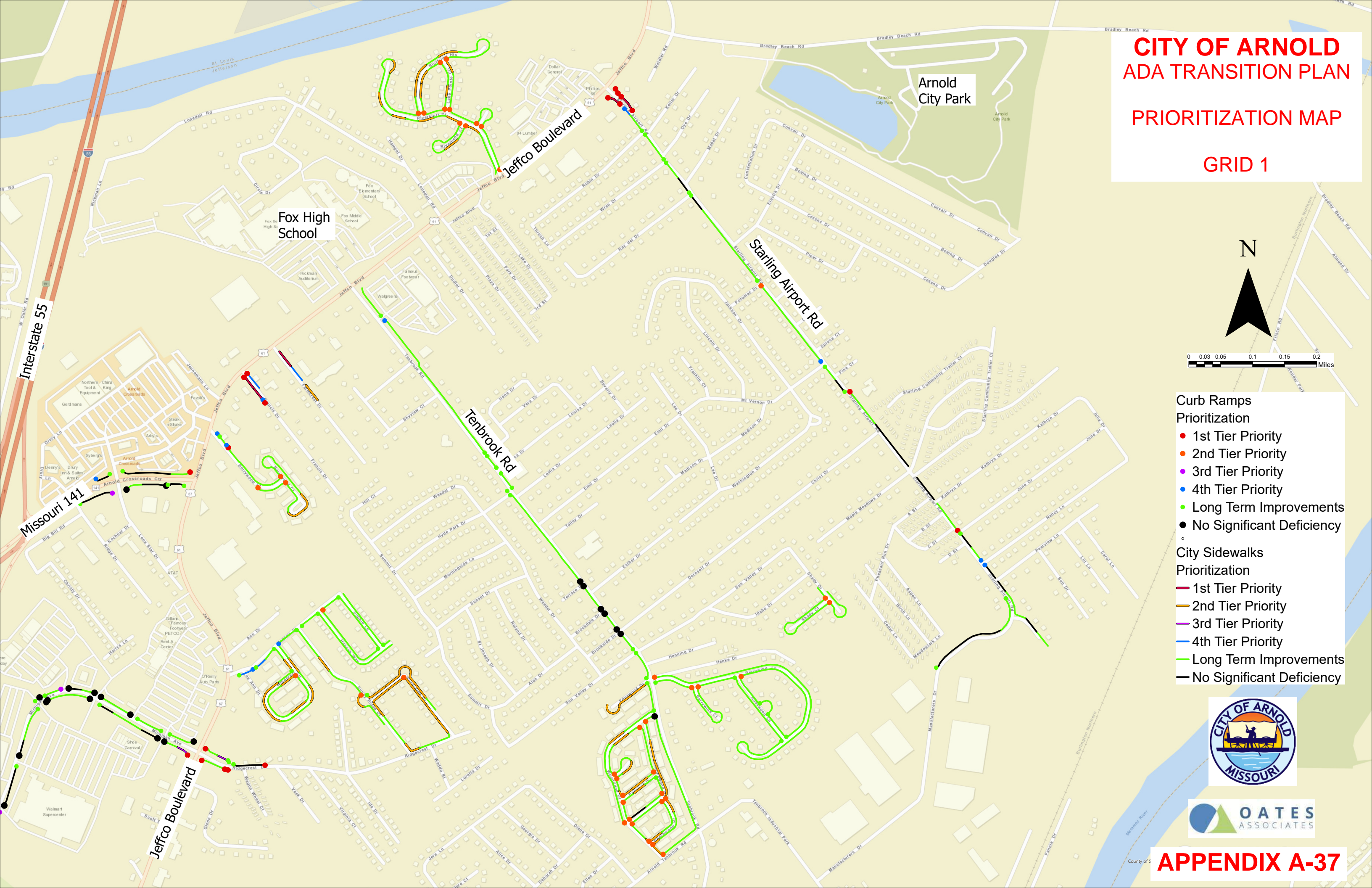


County of St. Louis, Missouri Dept. of Conservation, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, NGA, USGS

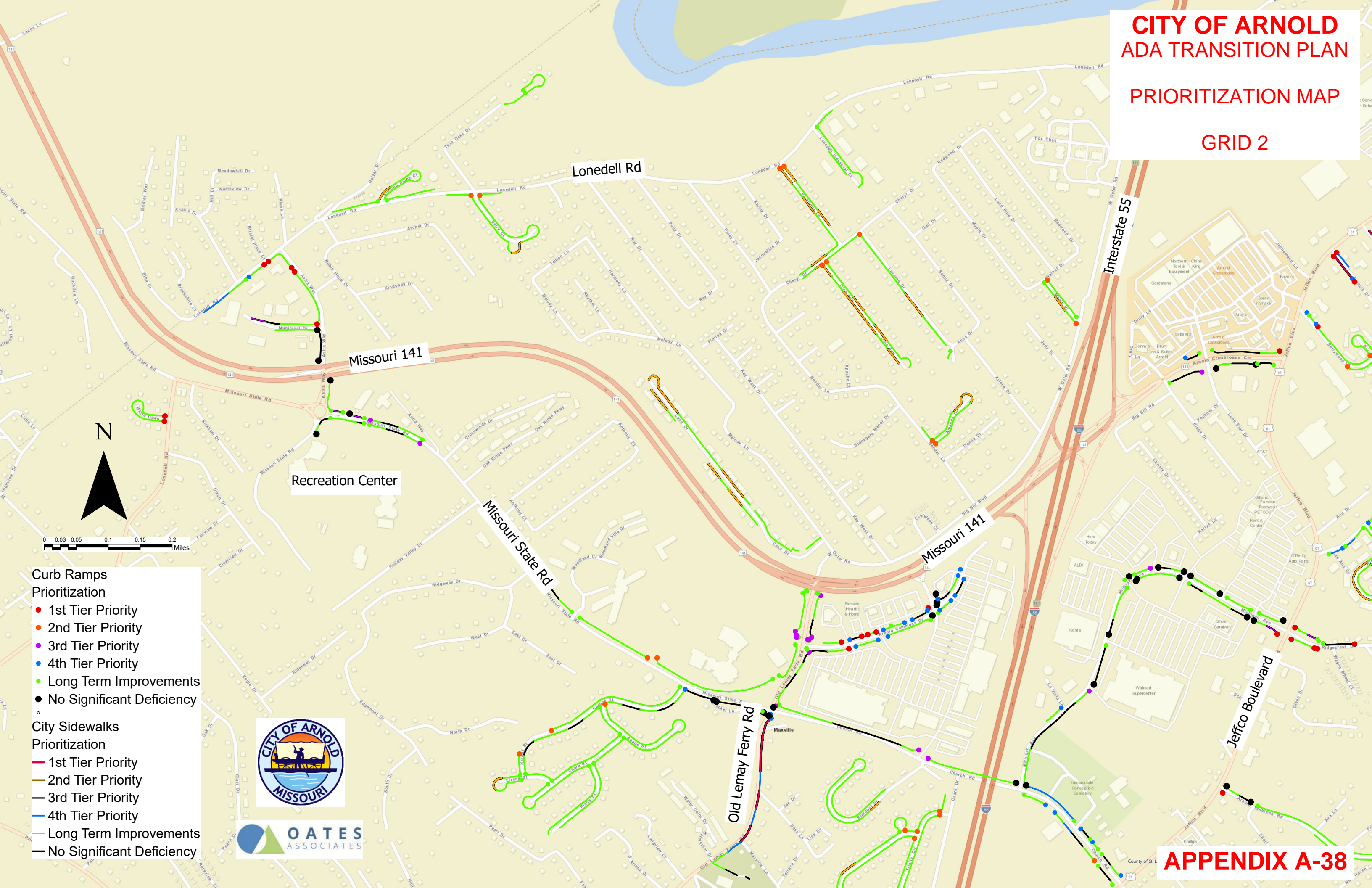
CITY OF ARNOLD ADA TRANSITION PLAN PRIORITIZATION MAP GRID 1



- Curb Ramps Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency
- City Sidewalks Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency

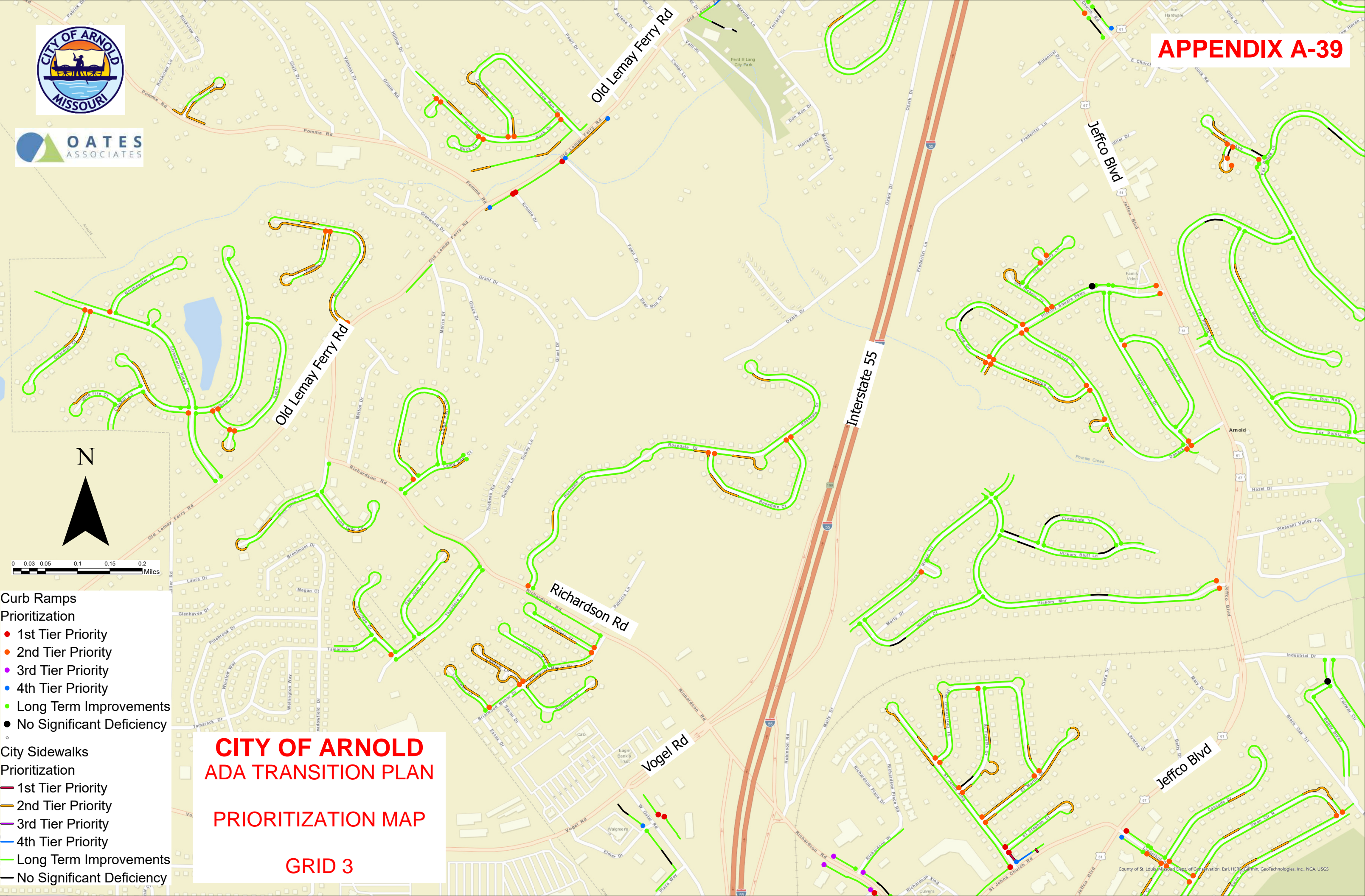


CITY OF ARNOLD
ADA TRANSITION PLAN
PRIORITIZATION MAP
GRID 2



- Curb Ramps**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency
- City Sidewalks**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency





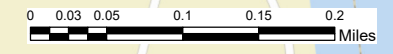
- Curb Ramps**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency

- City Sidewalks**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency

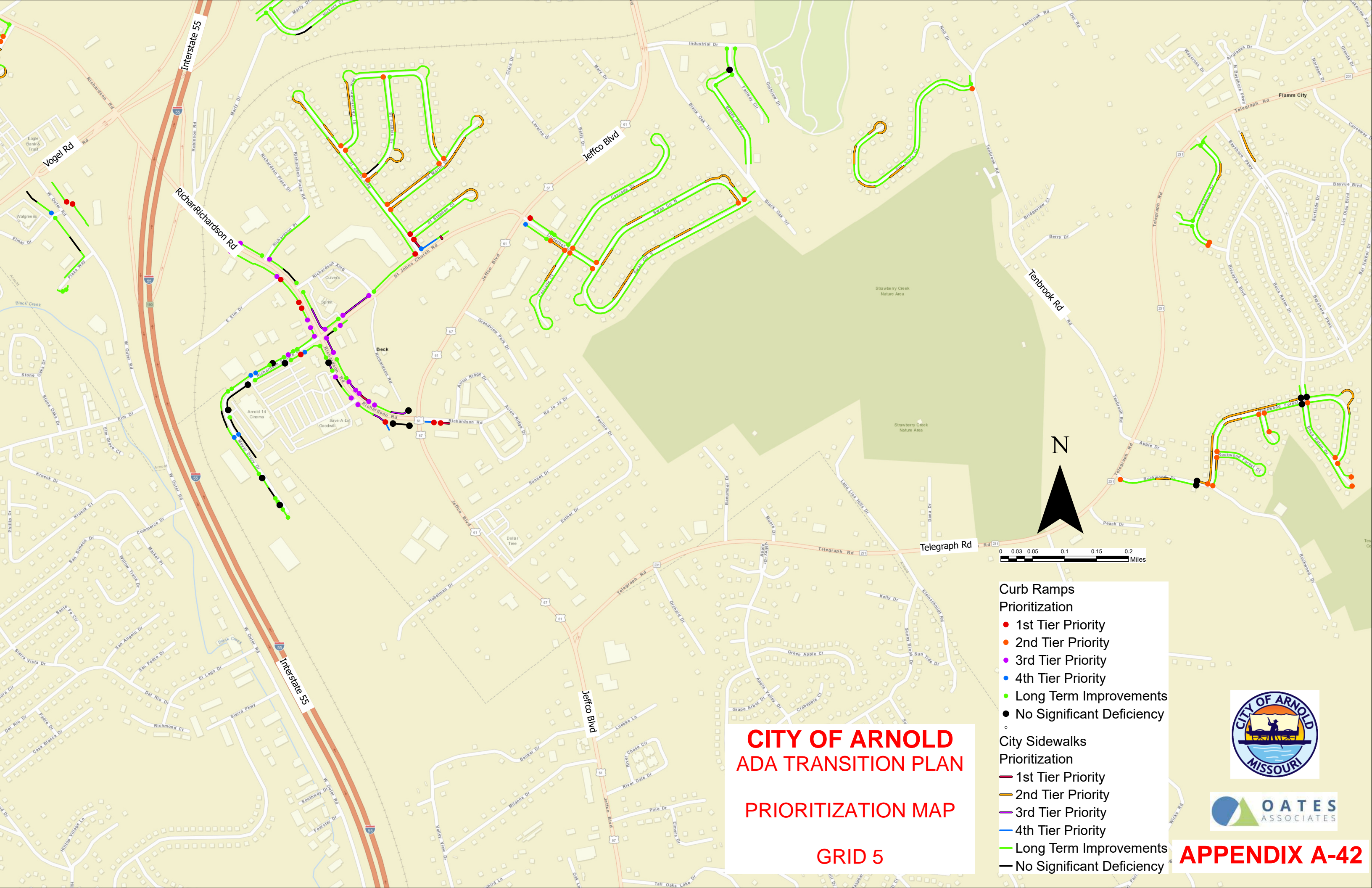
CITY OF ARNOLD
ADA TRANSITION PLAN
PRIORITIZATION MAP
GRID 3

CITY OF ARNOLD ADA TRANSITION PLAN PRIORITIZATION MAP

GRID 4



- Curb Ramps**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency
- City Sidewalks**
Prioritization
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency



**CITY OF ARNOLD
ADA TRANSITION PLAN
PRIORITIZATION MAP
GRID 5**

- Curb Ramps
Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency
- City Sidewalks
Prioritization**
- 1st Tier Priority
 - 2nd Tier Priority
 - 3rd Tier Priority
 - 4th Tier Priority
 - Long Term Improvements
 - No Significant Deficiency

