

BEACHWOOD CITY COUNCIL

PUBLIC WORKS COMMITTEE

AGENDA

MONDAY, AUGUST 20, 2018 5:30 P.M.


at Beachwood City Hall, Conference Room A, 25325 Fairmount Boulevard, Beachwood

Justin Berns
Alec Isaacson
Barbara Bellin Janovitz
James Pasch

1. Mayor's report.
2. Discussion regarding signage in the City of Beachwood, Ohio.
3. Discussion regarding Deer Culling in the City of Beachwood, Ohio.
4. Discussion regarding sidewalks in the City of Beachwood, Ohio.
5. Any other matters coming before the Public Works Committee.

CITY OF *Beachwood*
INTEROFFICE MEMORANDUM

TO: Public Works Committee
Justin Berns, Chair
Alec Isaacson, Member
Barbara Bellin Janovitz, Member
James Pasch, Member

FROM: Tina M. Turick, Assistant Administrative Officer 

DATE: August 15, 2018

SUBJECT: August 20th Work Session – Signage/Streetscaping

Members of Council have expressed an interest in exploring streetscaping ideas for major roadways such as Richmond Road as well as monument/entry signage. Since the Town Center design team did some work as it relates to wayfinding and entry signage, the Mayor, Building Commissioner and I met with them to discuss how we might approach this type of project.

The team provided a proposal which is attached for your review and information. The proposal reflects and/or provides the City with savings as it relates to work which has already been done as part of the Town Center project. The Town Center project, as you know has been put on hold as we further explore what will be done on the municipal site for the Police Department. As of today's date, there is \$30,477.78 left on that contract which has already been appropriated. For your information, we have also included samples of Wayfinding Analysis/Reports prepared by Guide Studios who is part of the design team represented in the attached proposal.

If there is interest from City Council to pursue further, we can ask the Design Team to present their proposal to City Council.

T.M.T.

Cc: Martin S. Horwitz, Mayor
Diane Calt, Law Director
Larry Heiser, Finance Director
Gary Haba, Police Chief
William Griswold, Building Commissioner
Chris Arrietta, Assistant Service Director
Whitney Crook, Clerk of Council

Enclosure: Proposal
Wayfinding Examples



August 3, 2018

Mayor Martin Horwitz
City of Beachwood
25325 Fairmount Boulevard
Beachwood, OH 44122

RE: City-wide Signage and Beautification Concept Development
Proposal #18273

Dear Mayor:

The City of Beachwood has earned a reputation as a five-star community. It is only right that the City's physical identity and brand be clear and beautiful to all citizens who drive through or work, live, and play in Beachwood.

Based on our July 16 meeting with you, Tina Turick, and Bill Griswold, we understand the City would like to examine ways to:

1. Strengthen its brand presence throughout the city.
2. Improve wayfinding throughout the city.
3. Beautify primary gateways into the city and primary vehicular corridors through the city.

Services & Deliverables

Based on this understanding, we propose the following services and deliverables:

Task #1: Wayfinding Analysis and Strategy

Wayfinding Strategy is a long-term plan for the development and implementation of a sign system for a complex environment. Your Wayfinding Strategy will provide your community with a clear understanding on what type of sign system and approach is required to address your wayfinding issues. At the end of this phase, the City of Beachwood will understand what type of program — down to the actual sign types you require, where we recommend signs are placed, a content and nomenclature matrix to begin developing messaging for the sign system, quantities for each recommended sign type and a preliminary project budget to further develop the program and get it fabricated and installed. We will provide the following:

- 1) **Existing Plans, Studies, Research, Data, and Brand:** Review and evaluation of existing research, studies, and strategic plans procured or developed for your organization.
- 2) **Wayfinding Analysis Discovery/Site Visit:** Meeting and site visit (Meeting #1) with the client team to understand the overall the issues, navigation composition and character of the place, as well as challenges and future plans. A Wayfinding Analysis Survey will be developed and sent out to members of the community (Stakeholders identified by the City) as part of the comprehensive Discovery Process.
- 3) **Wayfinding Analysis Report:**
 - a) Travel path(s), arrival and decision point study
 - b) Sign Type Hierarchy that outlines and defines the recommended sign types for the wayfinding system. For a Community Identity and Wayfinding program, the sign types we will focus on may include: Gateway, Vehicular Directional(s), and Facility Identification.
 - c) Preliminary Sign Location Plan
 - d) Nomenclature Matrix: terminology and message criteria for sign program
 - e) Preliminary Sign Program Budget, based on determined sign types, quantities and similar project fabrication and installation costs. This budget is organized into recommended priorities for the

- implementation of the new sign system for immediate improvement for your wayfinding experience.
- f) Presentation of key recommendations to be considered for the improvement of experience or the support of placemaking (Meeting #2).

Task #2: Signage Program Design & Implementation

- 1) **Conceptual Design:** This initial design step will address functional and aesthetic goals for a city-wide sign program. We will select three (3) sign types from the sign type recommendations made in the Wayfinding Analysis and present up to two (2) conceptual design themes for the proposed sign program based on the brand identity and character study conducted in Phase 1 (Meeting #3). Conceptual Design presentation typically includes hand sketches, support imagery and notations to describe the concepts. Client team will select a conceptual direction to move forward and provide consolidated feedback to inform the next phase of development.
- 2) **Implementation Plan:** Update budget based on selected concept design. Develop a budget phasing plan for implementing signage throughout the city.

Task #3: Gateway Concept Development

Tied directly to wayfinding and signage are larger-scale gateway treatments. Key intersections that should be considered for gateway concept development include:

- 1) Interstate 271 + Cedar
- 2) Cedar + Richmond
- 3) Chagrin + Green
- 4) Green + Harvard
- 5) Richmond + Harvard
- 6) Chagrin + Interstate 271

We will provide the following, for up to three of the intersections, at the City's choosing:

1. Create a base plan for each gateway, including parcel ownership, from Cuyahoga County GIS data.
2. Develop up to two enhancement concepts for each gateway. Any improvements inside the ODOT Right of Way will conform to ODOT's standard requirements. Concepts could include signage, landscape improvements, bridge enhancements, and lighting, and will consist of plan graphics and character imagery.
3. Meet with and present concepts to the city (Meeting #2). Develop consensus on preferred concept.
4. Refine concept for each gateway and create final deliverables. All deliverables will be PDF's:
 - a. Color illustrative plan
 - b. Character imagery, to convey design intent
 - c. Schematic-level cost estimate

Task #4: Corridor Beautification Concept Development

The Richmond and Fairmount corridors travel border-to-border through the city, and lead to the city's current administrative center and the future Heart of Beachwood. It is important to examine the best enhancements that will speak the city's brand, and lead visitors to the city's core.

1. Develop up to two concepts for each corridor. The concepts will coordinate with existing ROW and utilities, as provided in electronic format from the city.
2. Streetscape concepts will be represented with a representative color plan segment and section sketches.
3. OHM will meet with and present the concept options to the City's project team, with the goal of building consensus around a preferred option (Meeting #2).
4. Based on the feedback, OHM will finalize the preferred concept, update the plan and section, and develop a schematic-level cost estimate.

Final Deliverables Summary:

1. Wayfinding Analysis Report
2. Sign Family Concept and Implementation Plan
3. Gateway plan, character imagery, and cost estimate for (3) gateway locations
4. Corridor plan typical segment and section and implementation cost estimate.

Notes & Assumptions:

1. Public meeting preparation and participation, or presentation(s) to City Council may be required to complete the project. If requested, we can prepare materials for and participate in any public meetings or City Council presentations, at the hourly rates listed below.

Fee Schedule:

We will perform the tasks listed above for the following hourly fees.

Task	Fee
Task #1: Wayfinding Analysis and Strategy	\$7,000
Task #2: Signage Program Design & Implementation	\$7,500
Task #3: Gateway Concept Development	\$7,500
Task #3: Corridor Beautification Concept Development	\$7,500
Total	\$ 29,500

Hourly Rates:

- 1) Landscape Architect III: \$120
- 2) Landscape Architect II: \$100
- 3) Landscape Architect I: \$90
- 4) Wayfinding Strategist: \$130
- 5) Environmental Graphic Design Consultant: \$120

Authorization

If you find this proposal to be acceptable, please provide OHM with authorization to proceed by signing below and returning a copy of the signed proposal. Please initial tasks authorized to proceed in the above fee schedule.

We are excited for the opportunity to work with you on this project! Please do not hesitate to contact me directly at 216-346-2637, should you have any questions or need additional information.

Sincerely,
OHM Advisors



Matt Hils, Principal
matt.hils@ohm-advisors.com
D: 330.913.1057 C: 216.346.2637

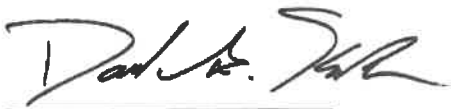
Authorization to Proceed

Signature

Date

Printed Name

Title



David G. Krock, PE, Director
david.krock@ohm-advisors.com
D: 330.913.1045 C: 330.350.0521

Standard Terms & Conditions

1. **THE AGREEMENT** – These standard Terms and Conditions and the attached Proposal or Scope of Services, upon their acceptance by the Owner, shall constitute the entire Agreement between OHM Advisors, registered in the State of Ohio, and the Owner. The Agreement shall supersede all prior negotiations or agreements, whether written or oral, with respect to the subject matter herein. The Agreement may be amended only by mutual agreement between OHM Advisors and the Owner and said amendments must be in written form.
2. **SERVICES TO BE PROVIDED** – OHM Advisors will perform the services as set for the in the attached proposal or scope of services which is hereby made a part of the Agreement.
3. **SERVICES TO BE PROVIDED BY OWNER** –
The Owner shall at no cost to OHM Advisors:
 - a. Provided OHM Advisors' personnel with access to the work site to allow timely performance of the work required under this Agreement.
 - b. Provide to OHM Advisors within a reasonable time frame, any and all data and information as may be required by OHM Advisors to perform the services under this Agreement.
 - c. Designate a person to act as Owners representative who shall have the authority to transmit instructions, receive information, and define Owner policies and decisions as they relate to services under this Agreement.
4. **PERIOD OF SERVICE** – The services called for in this Agreement shall be completed within the time frame stipulated in the Proposal or Scope of Services, or if not stipulated shall be completed within a time frame which may reasonably be required for completion of the work. OHM Advisors shall not be liable for any loss or damage due to failure or delay in rendering any service called for under this agreement resulting from any cause beyond OHM Advisors' reasonable control.
5. **COMPENSATION** – The Owner shall pay OHM Advisors for services performed in accordance with the method of payment as stated in the Proposal or Scope of Services. Method of compensation may be lump sum, hourly, based on a rate schedule, percentage of the construction cost, or cost plus a fixed fee. The Owner shall pay OHM Advisors for reimbursable expenses for sub consultant services, equipment rental or other special project related terms at a rate of 1.15 times the invoice amount.
6. **TERMS OF PAYMENT** – Invoice shall be submitted to the Owner not more often than monthly for services performed during the preceding period. Owner shall pay the full amount of the invoice within thirty days of the invoice date. If payment is not made within thirty days, the amount due to OHM Advisors shall include a charge at the rate of one percent per month from said thirtieth day.
7. **LIMIT OF LIABILITY** – OHM Advisors shall perform professional services under this Agreement in a manner consistent with the degree of care and skill in accordance with applicable professional standards of services of this type of work. To the fullest extent permitted by law and notwithstanding any other provision of this Agreement, the total liability in the aggregate, of OHM Advisors and it Officers, Directors, Partners, employees, agents, and sub consultants, and any of them to the Owner and anyone claiming by, through or under the Owner, for any and all claims, losses, costs or damages of any nature whatsoever arises out of, resulting from or in any way related to the project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract or warranty, express or implied, of OHM Advisors or OHM Advisors' Officer, Directors, employees, agents or sub consultants, or any of them shall not exceed the amount of \$25,000 or OHM Advisors' fee, whichever is greater.
8. **ASSIGNMENT** – Neither party to this Agreement shall transfer, sublet or assign any duties, rights under or interest in this Agreement without the prior written consent of the other party.

9. NO WAIVER – Failure of either party to enforce, at any time, the provisions of this Agreement shall not constitute a waiver of such provisions or the right of either party at any time to avail themselves of such remedies as either may have for any breach or breaches of such provisions.
10. GOVERNING LAW – The laws of the State of Ohio will govern the validity of this Agreement, its interpretation and performance.
11. DOCUMENTS OF SERVICE – The Owner acknowledge OHM Advisors’ reports, plans and construction documents as instruments of professional services. Nevertheless, the plans and specifications prepared under this Agreement shall become the property of the Owner upon completion of the work and payment in full of all monies due OHM Advisors, however OHM Advisors shall have the unlimited right to use such drawings, specifications and reports and the intellectual property therein. The Owner shall not reuse or make any modifications to the plans and specifications without prior written authorization by OHM Advisors. In accepting and utilizing any drawings or other data on any electronic media provided by OHM Advisors, the Owner agrees that they will perform acceptance tests or procedures on the data within 30 days of receipt of the file. Any defects the Owner discovers during this period will be reported to OHM Advisors and will be corrected as part of OHM Advisors’ basic Scope of Services.
12. TERMINATION – Either party may at any time terminate this Agreement upon giving the other party 7 calendar days’ prior written notice. The Owner shall within 45 days of termination, pay OHM Advisors for all services rendered and all costs incurred up to the date of termination in accordance with compensation provisions in this Agreement.
13. OHM ADVISORS’ RIGHT TO SUSPEND ITS SERVICES – In the event that the Owner fails to pay OHM Advisors the amount shown on any invoice within 60 days of the date of the invoice, OHM Advisors may after giving 7 days’ notice to the Owner, suspend its services until payment in full for all services and expenses is received.
14. OPINIONS OF PROBABLE COST – OHM Advisors’ preparation of Opinions of Probable Cost represent OHM Advisors’ best judgment as a design professional familiar with the industry. The Owner must recognize that OHM Advisors has no control over costs or the prices of labor, equipment or materials, or over the contractor’s method of pricing. OHM Advisors makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual cost.
15. JOB SITE SAFETY – Neither the professional activities of OHM Advisors, nor the presence of OHM Advisors or our employees and sub consultants at a construction site shall relieve the General Contractor or any other entity of their obligations, duties, and responsibilities including, but not limited to, construction means, methods sequences, techniques or procedures necessary for performing, superintending or coordinating all portions of the work of construction in accordance with the contract documents and the health or safety precautions required by any regulatory agency. OHM Advisors has no authority to exercise any control over any construction contractor or any other entity or their employees in connection with their work or any health or safety precautions. The Owner agrees that the General Contractor is solely responsible for jobsite safety and warrants that this intent shall be made clear in the Owners agreement with the General Contractor. The Owner also agrees that OHM Advisors shall be indemnified and shall be made additional insureds under the General Contractors general liability insurance policy.
16. DISPUTE RESOLUTION – In an effort to resolve any conflicts that arise during the design or construction of the project or following the completion of the project, the Owner and OHM Advisors agree that all disputes between them arising out of or relating to this Agreement shall be submitted to nonbinding mediation, unless the parties mutually agree otherwise.



Wayfinding Analysis Report

Prepared for
City of Oak Creek, WI



13110 Shaker Square, Suite 101
Cleveland, OH 44120

guidestudio.com
216-921-0750


Guide®

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Prepared by Guide Studio, Inc.
for the City of Oak Creek, WI

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Wayfinding is a critical component for developing positive experiences

Well-developed wayfinding systems signal that something is happening in your place; it serves as a catalyst to enhance community pride and image. Wayfinding programs will:

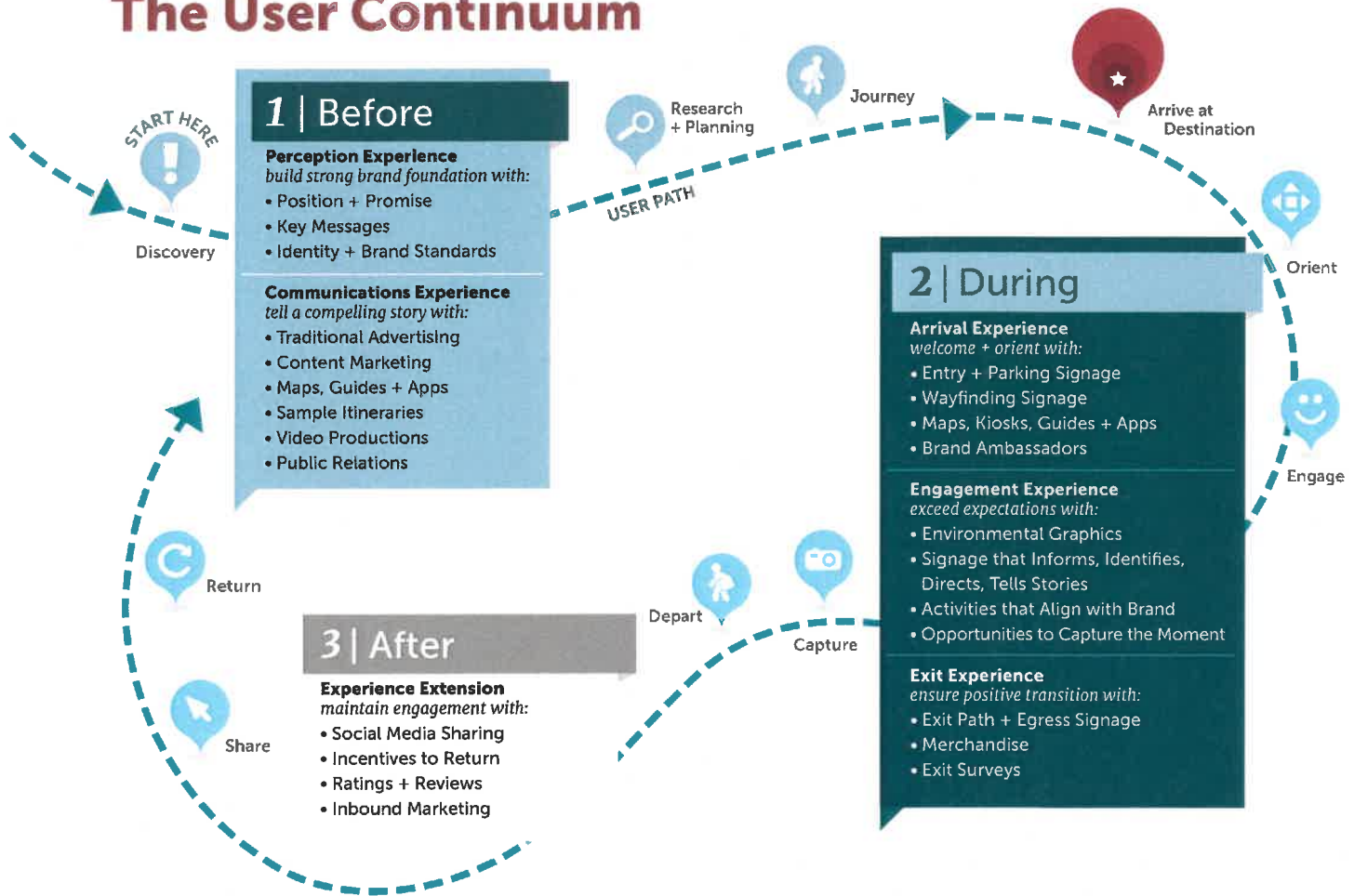
- Enhance your community's surrounding landscape
- Support understanding of your community
- Provide information for increased comfort and safety
- Elevate the perception of your place
- Inspire increased visitation

As a growing suburb of Milwaukee, Oak Creek is transforming from a bedroom community into a small, well-rounded city. With a new Town Center, the opening of IKEA and continued growth in the business, retail, and entertainment mix we offer, we know more new visitors will be traveling to and through our community. An effective Signage and Wayfinding Program will help Oak Creek welcome these visitors, help them comfortably navigate our city and direct them to amenities and unique experiences we have to offer.

Goals for a new Wayfinding and Signage Program for Oak Creek, WI

- Get visitors to explore the city, extend their stay, return and tell others
- Move people between Drexel Town Square and IKEA
- Recreation—connect the parks and trails; connect to the lake and the new Lake Vista Park
- Direct to (and promote) the hospitality cluster near the airport
- Connect the community and visitor amenities

The User Continuum



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When it comes to place-based experiences, setting expectations and consistently delivering throughout the entire experience is critical in creating positive impressions.

When we are talking about place, audiences, no matter how distinctive, share common ground in the sequence of time. Every experience can be defined in three categories: *before*, *during*, and *after*. We call this **The User Continuum**.

Connection with a place begins before arrival, and continues after leaving, but one of the first *physical interactions* a visitor has with a place is signage.

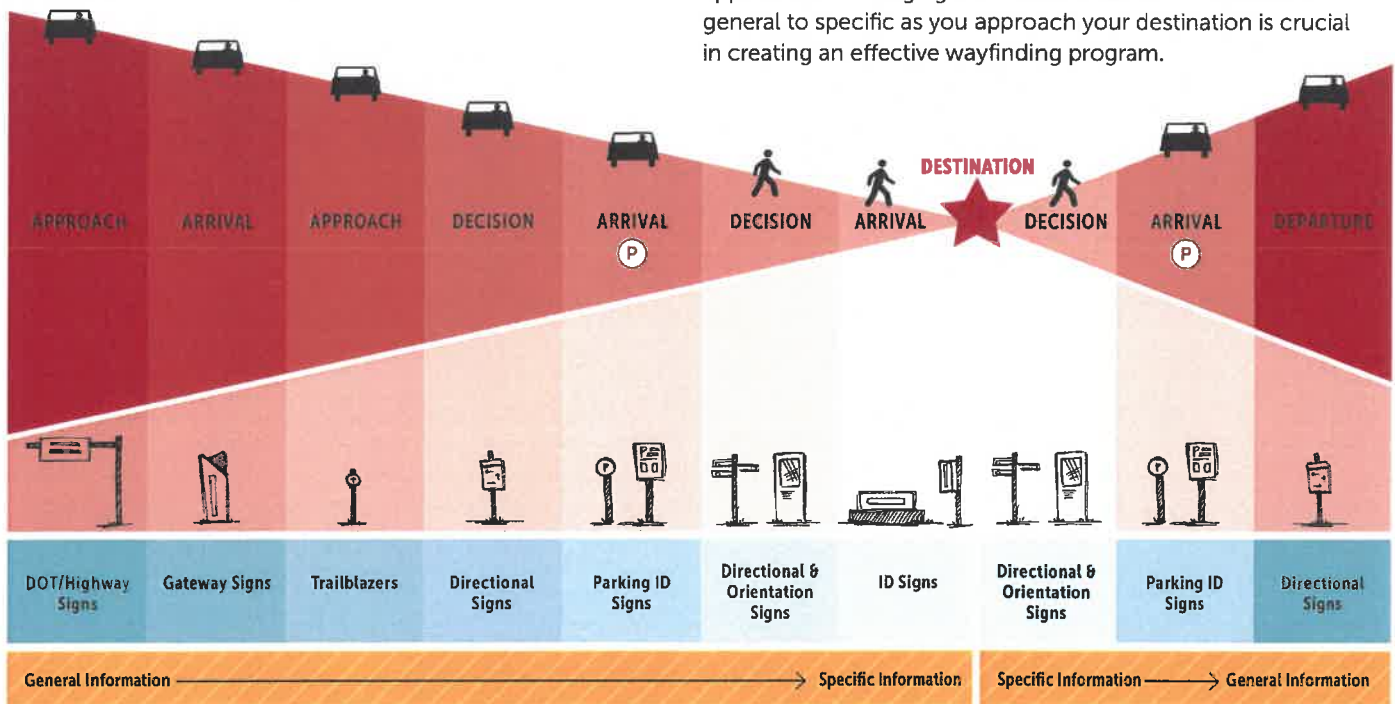
Signage occurs in the *during*—those in-the-moment touch-points that a visitor interacts with as they experience your place. The touch-points signage and wayfinding address are *arrival*, *direction*, *orientation*, *identification*, *engagement* and *departure*. Paying close attention to these touch-points can create a positive perception, or if ignored, can leave a lasting negative impression regarding the safety, comfort, value and relevance of your place.

When you approach or travel through your community, what does that experience look and feel like? Is it nice? Unique? Does it tell visitors where they are? Or is it underwhelming, confusing, frustrating?

Putting yourself in your visitors' shoes will allow you to see the gaps in your user continuum that can then be addressed to provide a better experience. Understanding and managing the touch points in each sequence of time along The User Continuum is critical to presenting a great experience and lasting positive impression. The more touch points you can influence to meet the needs of your audience at each of these steps, the more successful the total experience can be.

The Wayfinding Funnel

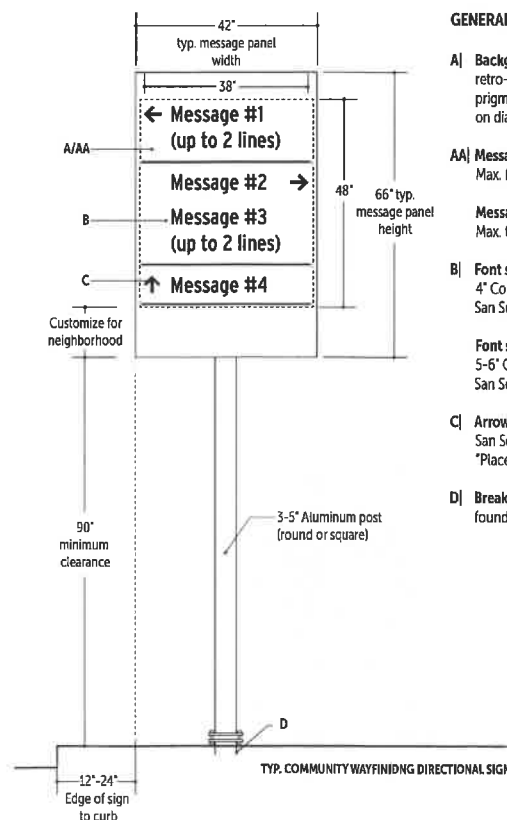
Drivers traveling at speeds of 25 mph or greater cannot comprehend more than 4-5 messages. Therefore, a systematic approach to messaging that breaks down information from general to specific as you approach your destination is crucial in creating an effective wayfinding program.



Design Criteria & Wayfinding Strategy

- > **USER FRIENDLY** | Text, graphics and mapping is legible and uncomplicated.
 - Directional messages will be limited to no more than 4-5 messages.
 - The users' initial destination for all vehicular wayfinding is Parking (closest to their destination).
- > **AESTHETICS** | Harmonious in all respects, enduring design and appropriate scale.
- > **MAINTAINABLE** | Cleanable, repairable surfaces, information easily changed or added, low maintenance and durable. Information hierarchy allows for an organized and manageable wayfinding program.
- > **VANDAL RESISTANT** | No exposed access points, tamper proof screws and bolts, strong structures that are securely installed.
- > **ORIENTATION** | Signs oriented for the greatest visibility for users.
 - Landscaping and other structures should enhance and not interfere with the visibility of the sign.
 - Directional signs will be implemented at key decision points and announce only major visitor-based destinations. Private businesses, (corporate offices, restaurants, hospitality, etc.) are not typically placed on community wayfinding signs.
- > **CONSISTENCY** | Sign/element design are consistent throughout the sign system and easily recognized as information hubs throughout the City.
 - Nomenclature should be consistent from wayfinding signs down to actual identification at the destination arrival point. This consistent language should flow down to pedestrian sign systems as well as destination language used by the places and institutions themselves.
 - Parking lot identification sets up a recognizable system, limits message lengths, and reinforces a unified parking experience.
- > **SYSTEM** | This program must consider the use of all wayfinding tools and not simply signage.
 - Sign messages should be communicated in a hierarchical progression from general to specific as visitors move from the outskirts of the city toward their destination.
 - Effective wayfinding provides the most critical information at the proper and relevant time.

Anatomy of a Community Wayfinding Sign



GENERAL GUIDELINES

- A) Background and graphics to be retro-reflective using high-intensity prismatic vinyl (graphics may be printed on diamond grade reflective sheeting)
- AA) Message Quantity: less than 35MPH
Max. four (4) destinations
- Message Quantity: greater than 35MPH
Max. three (3) destinations
- B) Font size: less than 35MPH
4" Copy Height
San Serif
- Font size: greater than 35MPH
5-6" Copy Height
San Serif
- C) Arrow Style:
San Serif
"Placed with directive"
- D) Break-away pole connection/
foundation as approved by DOT/FHWA

Oak Creek Discovery Summary

VISITOR CHALLENGES

- | | |
|---|---|
| • Clutter of existing signage | <i>Too much information & mis-matching signage creates confusion & anxiety, causing visitor to ignore the wayfinding messages being given to them</i> |
| • Speed on Ryan Rd. | <i>Higher speeds means less comprehension time and increased anxiety</i> |
| • Lack of wayfinding that connects trails | <i>Extensive trail system with a “mixed bag” of identities and lack of wayfinding</i> |
| • Knowing about destinations past IKEA | <i>How to get people coming to IKEA (or other destinations) into the city so they explore, stay longer and return</i> |

MAJOR ENTRY ROADS

- | | | |
|---------------------|--|-----------------|
| • S. Howell Ave. | <i>main commercial route, connection to airport & Milwaukee</i> | State Route 38 |
| • Chicago Rd. | <i>north/south lakefront route for visitors</i> | State Route 32 |
| • E. Ryan Rd. | <i>intersection of E. Ryan & Howell is consistently busy</i> | State Route 100 |
| • W. Drexel Rd. | <i>intersection of S. Howell & Drexel is consistently busy</i> | Owned by City |
| • W. Rawson Ave. | <i>lackluster experience</i> | County Rd. BB |
| • S. 27th St. | <i>Western border of Oak Creek</i> | State Route 241 |
| • Exits off I-41/94 | <i>College, W. Rawson, W. Drexel & E. Ryan; future exit to be built at County Line Rd.</i> | Interstate |

MAJOR DEVELOPMENTS/CENTRAL BUSINESS DISTRICTS

- | | |
|-----------------------|---|
| • IKEA | <i>opens June 1</i> |
| • Drexel Town Center | <i>opened & developing</i> |
| • Northwestern Mutual | <i>large insurance company in adjoining community (Franklin)</i> |
| • Hospital | <i>in adjoining community (Franklin); Wheaton Franciscan Healthcare – Franklin Hospital</i> |

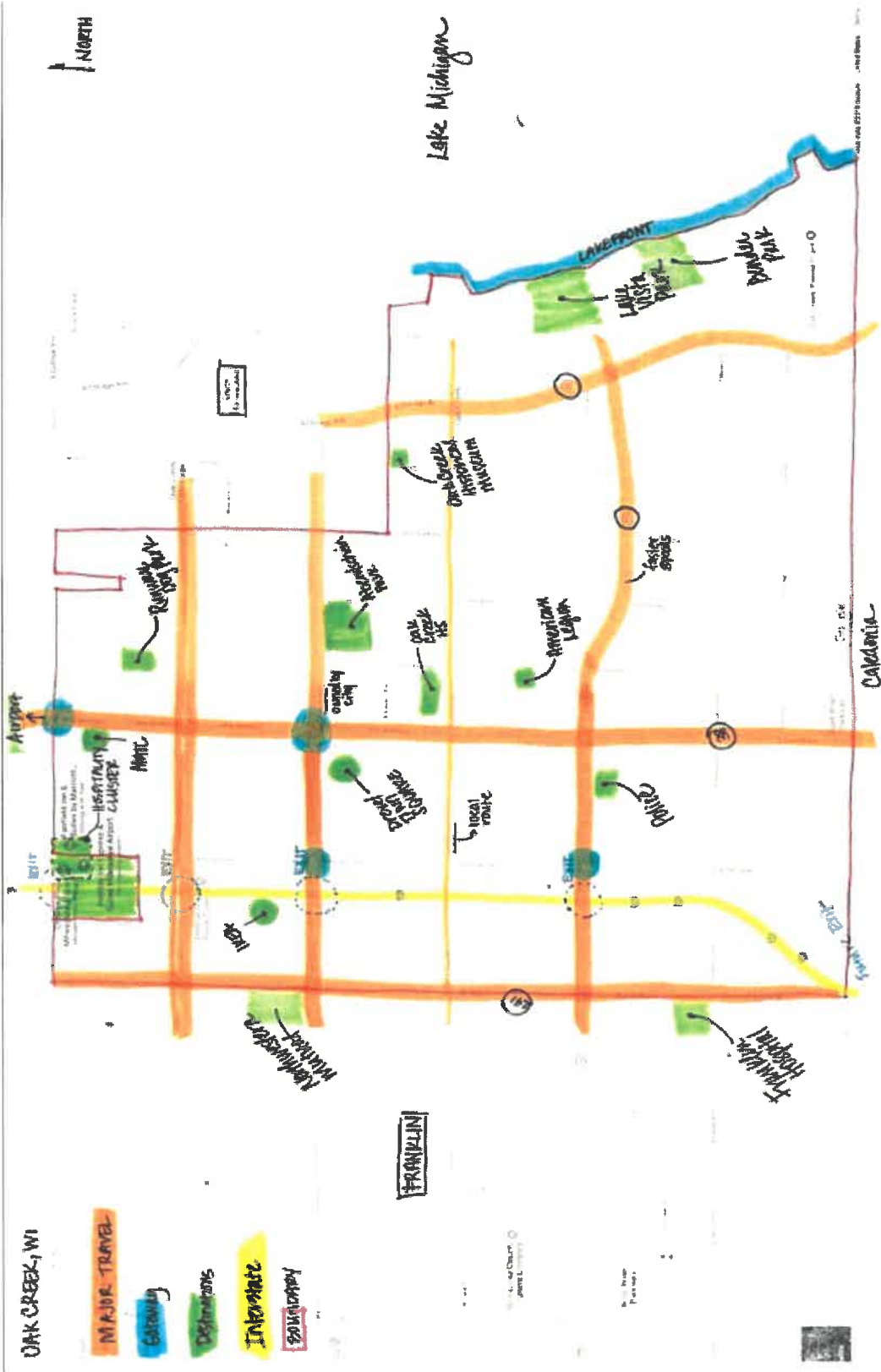
MAJOR DESTINATIONS

- | | |
|--|---|
| • Airport | • Bender Park (County) |
| • Hospitality Cluster | • Business Parks |
| • MATC (Milwaukee Area Technical College) | • High School Campus |
| • IKEA | • Trail System throughout the region |
| • Drexel Town Square | • Conservation Areas (identification purposes only) |
| • County-wide Trail System: Oak Leaf trail | • Historical Society campus |
| • Town Square Wayfinding Civic | • American Legion grounds – seasonal event uses |
| • Center/Library Complex | • Runaway Dog Park |
| • Abendschein Community Park | • Lake Michigan (Lakefront) |
| • Lake Vista Park | • Police Department |

= Primary (visitor-based) vehicular destinations:

Drivers traveling at speeds of 25 mph or greater cannot comprehend more than 4–5 messages, therefore, these highlighted destinations have been determined as wayfinding priorities. This does not mean other destinations will never appear on signage at appropriate locations.

Wayfinding Study



Travel Paths

Primary travel paths have been determined based on major entry roads and primary visitor destinations. Travel paths allow us to begin to see traffic patterns, areas of high volume and decision points where potential directional information is needed.



Decision Points

By locating decision points, we are able to begin determining where and what kinds signage is needed.

Quantifying signage at decision points: Vehicular directional signs should be placed on the right-hand side of the road in optimal view of the driver. Therefore, depending on the size of the intersection and flow of traffic, intersection may require multiple signs as shown in the example below.



(4) directional signs (D) are placed at this intersection to account for traffic approaching from all directions.

Gateways

A **perceived entry point** into a city is different from a **jurisdictional entry point** (the **actual defined boundary**). It is the moment—a **feeling**—when the visitor recognizes they have arrived. Location could be based on nice landscaping, a great view, a landmark, architecture or environmental elements that represent the **city's character**.



Sign Type Recommendations

Gateways



Gateway elements support placemaking and identification of your city and key assets within your community. These structures are implemented to establish pride in community and introduce the quality and character of place upon entry.

While signs are placed at jurisdictional boundaries, larger and more elaborate statements are made at points where one psychologically feels as if they have arrived.

Types of Gateways

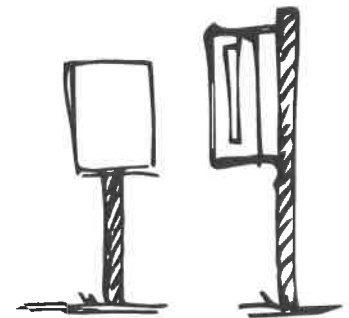
- Monument Signs
- Post-Mounted Signs
- Banner Programs
- Landscape/Hardscape
- District/Neighborhood Identification
- Public Art Installations



RECOMMENDED SIGN TYPE FAMILY



Gateway Monument



Jurisdictional Gateway

Sign Type Recommendations

Vehicular Directionals



Vehicular signs and messages are designed to be easily read by people driving at speeds of 25 mph or more. Federal and State guidelines may dictate design, structure and messages.

There can be multiple levels of directional signs that progress from general to specific messages, as well as different scales depending on the surrounding environment and speed of traffic. Since the final destination for vehicular traffic is typically parking many vehicular wayfinding programs include direction to destination based parking and/or public parking.

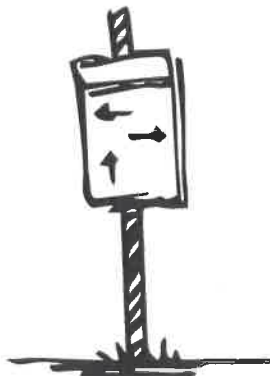


Types of Vehicular Directionals

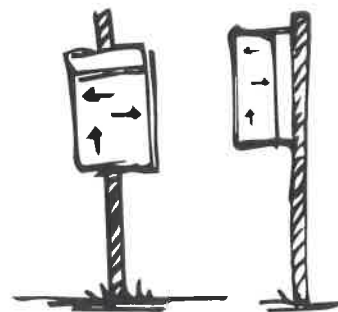
- Primary Directionals
- Secondary Directionals



RECOMMENDED SIGN TYPE FAMILY



Primary Directional



Secondary Direction-

Sign Type Recommendations

Identification



Signage that identifies specific landmarks, assets, and points of interest confirms your visitors' arrival and communicates the level of care and attention that you have invested into your city's destinations.

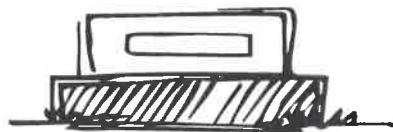
A consistent identification sign family not only provides wayfinding clarity, but also indicates support and unity by the city, which can help attract business and residents.

Types of Vehicular Directionals

- City Owned/Operated Facilities
- City Owned/Operated Parks
- Industrial or Business Parks



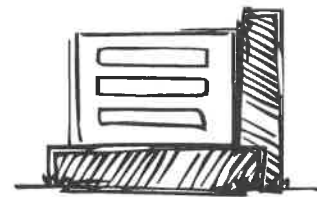
RECOMMENDED SIGN TYPE FAMILY



City Facility ID



Park ID



Industrial/Business Park ID

Program Budget

SIGN TYPE	QTY	UNIT COSTS RANGES (includes Fabrication and installation)	TOTAL
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Gateways

Perceived Gateway	6	HIGH \$18,000	\$108,000
		LOW \$5,000	\$30,000
Jurisdictional Gateway	7	HIGH \$4,500	\$31,500
		LOW \$1,500	\$10,500

Vehicular Directionals

Primary Directional	12	HIGH \$4,500	\$54,000
		LOW \$3,000	\$36,000
Secondary Directional	15	HIGH \$3,500	\$52,500
		LOW \$2,500	\$37,500

CONTINGENCY ADD 15%

PRIORITY 1: VEHICULAR DIRECTIONALS ONLY \$84,525—\$122,475

Identification Signs

City Facility Identification	1	HIGH \$8,000	To be determined
		LOW \$4,000	To be determined
City Park Identification	1	HIGH \$8,000	To be determined
		LOW \$3,500	To be determined

NOTES:

1. Identification signs have not been included in the total, as quantities are unknown at this time.
2. Design affects budget as does final programming of your site or community. These numbers are for planning purposes only.
3. See Appendix for historic project pricing diagrams.
4. Implementation phasing can be broken down over a period of years. Typically, communities we have worked with implement over a 4-5 year period depending on the size of their overall sign program.

We recommend the Vehicular Directionals as your highest priority items, meaning if installed, they will provide the most value based on your wayfinding challenges and goals. These can be developed and implemented as a stand alone project.

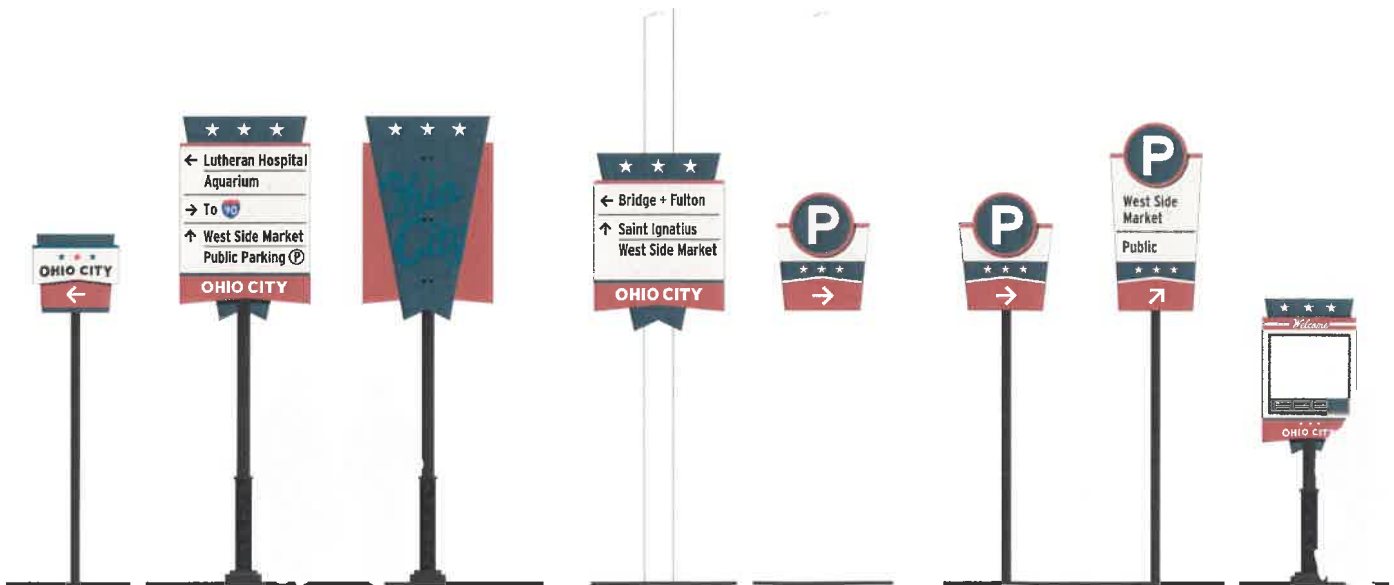
Budget Range Examples

TIER 1 - LOW

Simpler in design and size, these projects often enhance the existing elements of a wayfinding or signage program instead of starting from scratch, and typically do not include large or elaborate gateway elements. Sign designs that leverage flat graphics and simple shapes are cost effective, using single sheets of aluminum in fabrication. Also, signs may be attached to existing poles or structures and any new elements would be added to existing signage or posts.



Tremont Neighborhood



Ohio City

Budget Range Examples

TIER 2 - MEDIUM

While the journey is always a priority no matter the budget, Tier 2 allows for more customization. Decorative posts or fabricated panels that are layered and dimensional allow for a more intricate and higher quality aesthetic within the destination. Custom shapes and cuts, and light use of masonry or stonework add to the character and the quality (as well as the cost).



City of Kent



City of Worthington

Budget Range Examples

TIER 3 - HIGH

In addition to being larger in scope and complexity, these projects often include a higher level of customization, including elaborate shapes, complex designs and unique materials that appeal to a higher aesthetic. Illuminating signs or adding electrical components, heavy use of masonry or stonework, and large gateway elements beautify the space and create an eye-catching wayfinding program.



City of North Olmsted



City of Sandusky

Budget Range Considerations

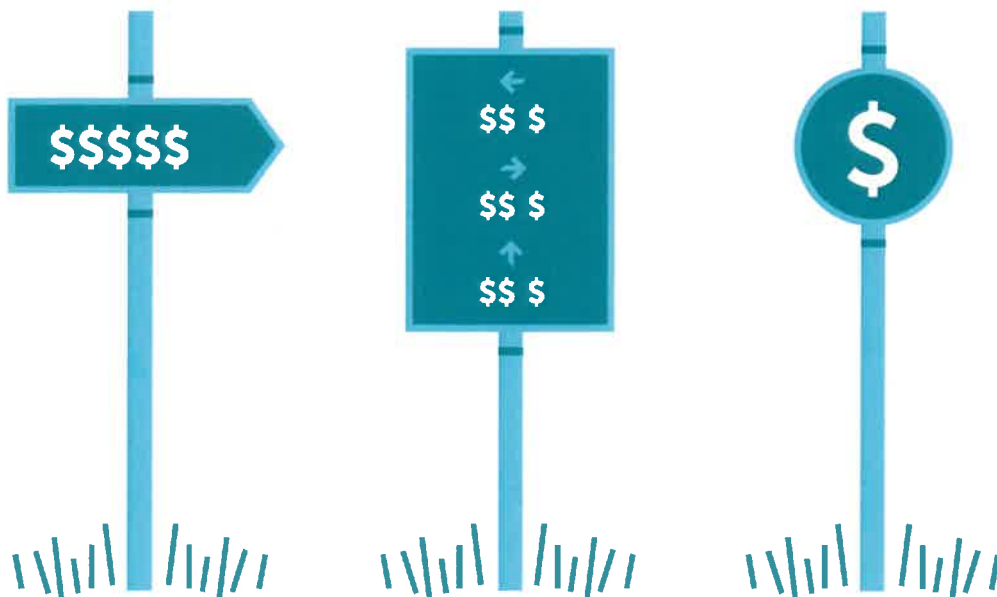
No matter the size of the wayfinding project, there are always considerations and variables that impact the scope and budget.

Material selection: Most exterior signs are built from aluminum, but other higher end materials can be used if the design intent or brand aesthetic calls for it.

Material usage: Typically the larger amount of material used equals a better cost per unit, essentially buying in bulk and cutting down on waste.

Size and scale of signage: The size and complexity of signs implemented in a project directly affect the fabrication and installation cost.

Some variables are easier to visualize when looked at through the lens of fabrication. A more complicated signage system with layering and ornate details will drive up cost. In some cases, cities take the responsibility of removing existing signage, but that can also fall on the fabricator, adding to the overall cost. The type of installation required can affect cost. For example, installing a post in soil is typically easier (and less expensive) than installing in concrete or pavement. These are all variables that need to be considered when planning and budgeting for your wayfinding and signage program.



Future Recommendations

The following sign types have not been included in the initial wayfinding analysis, but may be considered as future additions to the program.

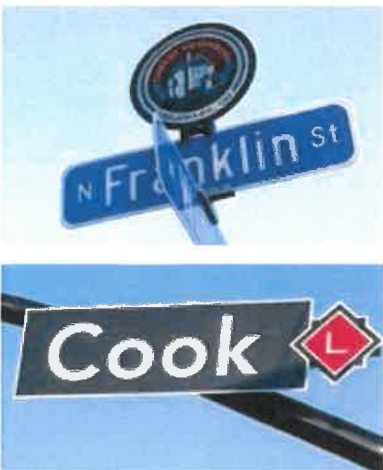
- Pedestrian Directionals or Information Kiosks
- Trail/Bike signage
- Custom Street sign or added embellishment
- Banner program(s)

If it does not already have a sign program, Drexel Town Center may benefit from a family of pedestrian directionals, information kiosks vehicular and parking signage, etc.

While it is typically the responsibility of the organization managing the trail to place signage on the trails themselves, it is important that cities promote themselves and their assets to trail users. Trail users are an additional audience that can be an economic driver for the city.

Street signs can serve as a relatively inexpensive placemaking device that increases brand awareness and defines the boundaries of a district, area or city.

Banners can be temporary or permanent, or a mixture of both. Not only a placemaking tool, banners can promote events, tell stories and add character to a streetscape. Banners show that something is happening in your community and can even be used as an economic source by selling advertising space to merchants and businesses.



TIMELINE

The following timeline is a rough estimation. Several factors may affect the timeline including client review and approval, government review processes, bidding process, size and scope of the project, etc.

PHASE 2 Build Up	PHASE 3 Move Forward
Design & Programming	Implementation
Kick-off Meeting(s)/Site Visit Conceptual Design & Presentation Schematic Design (R0:30%) & Presentation Programming Revisions Fabrication Budget Update Design Intent (R2:60%) & Presentation Programming Revisions Fabrication Budget Update Bid Package (R3:100%) Prepare Final Art	Bid Process Bid Review and Evaluation Contractor Meetings & Coordination Submittal Reviews Fabrication Installation Punch list Final Inspection
12-16 weeks	16-24 weeks

DEVELOPMENT APPROACH AND COSTS

The following outline is the Scope and Approach to developing a Signage and Wayfinding Program that is ready for Implementation. The outline and fee takes in the assumptions that we would develop the City of Oak Creek Sign Program containing: Gateway Signs, Vehicular Directionals and City and Park Facility Signs per the report. Additional Sign Types, or other types of placemaking elements would constitute a separate effort.

Project Approach — Design Development

Part 1: Design Development

- **Discovery Visit** includes site visit and meeting with the project team: Review the City's sense of place and overall visitor experience.
- **Sign System Programming** based on the Wayfinding Analysis and visit, we will establish coordinated sign messaging with each sign type location. Client team will review and provide consolidated feedback.
- **Conceptual Design** will address functional and aesthetic goals for a beautiful and maintainable program. We will present up to three (3) conceptual design themes for the proposed program. The Client team will select a conceptual direction to move forward and provide consolidated feedback to inform the next phase of development.
 - Conceptual Design typically includes hand sketches, support imagery and notations to describe the concepts.
 - Based on the selected concept direction, our team will begin to develop the Sign Program.
- **Sign Type Structures Drawings** Provide dimensions and detailed illustrations to demonstrate the look and feel of each sign type are developed. Material and fabrication specifications will be recommended and noted on each drawing. Client team will review and provide consolidated feedback. Any revisions will be presented in the Design Intent Phase.
- Design Development is an iterative process. We will present progressive design documentation for review in the following submittal types: Schematic Design and Design Intent.
 - Schematic Design (30%)** With an approved sign design concept and message schedule as our guide, we will develop the recommended sign system family as outlined in the Sign Program Framework. We will begin deeper exploration and presentation of the sign program's character, style, materials and fabrication methods. Sign program budget update is included.
 - Design Intent (60%)** Comments and changes based on the review of the Schematic Design package will be incorporated. Views and details that demonstrate the design intent of each sign type along with sign face and message layout instructions are presented. The location plans and a coordinated message schedule will undergo a final update and may include additional details

If desired, a Public Open House would be appropriate after Schematic Design is approved to generate interest and excitement.

- **Instructional Sign Type Drawings (100%):** For each sign type in the Sign System, we will provide a written narrative of its function, use, any particular modular/changeable capability and an overview drawing of the sign type for reference.
 - **Performance Specifications:** Instructional and guidance information for sign contractors in regards to the performance expectations of materials used, fabrication and installation techniques, warranty requirements as well as maintenance information/instructions. such as location conditions, installation needs and requirements.

Project Approach — Implementation

Part 2: Implementation (Optional)

Bid Management

This phase addresses the implementation of your program. Our team helps you select the most appropriate fabrication partner, monitors the construction process to ensure the design intent is upheld and reviews the program once it is installed to make sure it is completed to the quality and standards that you expect.

- **Bid Review and Evaluation:** The project team will review submitted proposals and provide the client with a compilation of project bids and evaluation report, along with a formal recommendation for the project award.

Implementation Oversight

Our team will review colors, materials, fabrication methods, including shop drawings and message layouts from the fabricator. We will red-line shop drawings and review materials and mock-ups to confirm that all submitted items comply with our design intent. We will perform inspections at the fabricator's shop as well as in the field during the installation process.

Services and tasks during this phase of work include:

- Meeting with selected contractor(s) for start of work to review all program documents.
- Manage contractor relationships, schedule and on-site coordination.
- Review, approve and submit contractor and professional pay applications.
- Sign Location verification and walk-through with client and contractor.
- Oversee progress of fabrication.
- Oversee progress on content population and deployment of digital media components.
- Oversee progress of installation.
- Survey finished project; prepare detailed punch list.

Professional Fees

Part 1: Design Development

Includes (2) on-site visits

Final deliverable: Sign Program Bid Package

\$18,000

Part 2: Implementation (optional)

Includes (2) on-site visits

Pre-Fabrication walk-through with Client and Selected Sign Contractor

Post Installation walk-through with Client

\$7,000

Project Framework

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Introduction

With its small town sense of community, the services of a large city, and the music, art, and science of a cosmopolitan center—all situated in just under five square miles—the City of Oberlin has justifiably earned numerous accolades, including being named one of the "top 20 best small towns to visit" by *Smithsonian Magazine*.

Founded concurrently with Oberlin College in 1833, the City is famous for its rich and diverse history of progressive thought, innovation, and social activism. The community was a beacon of freedom during the years of the Underground Railroad, and Oberlin College was the first in the country to admit men and women of all races. The City and College are pioneers in the current environmental movement, and, with the development of a 2013 Climate Action Plan, are committed to becoming "carbon neutral" by 2050.

—Excerpts from City of Oberlin Request for Proposal

The City of Oberlin is seeking a cultural wayfinding program that promotes Oberlin as a premier arts destination and reflects the qualities and personality traits that have made Oberlin such a unique place throughout its history.



Create a Wayfinding Program...

- that supports the city's image as a **diverse and welcoming** community with a strong reputation for its progressive thought, history, culture and education
- that creates a **strong and positive awareness** to the city and its assets as a popular destination for people to visit – an arts mecca where visitors will stay longer, return and tell others
- that helps integrate arts and culture into the fabric of civic life in order to support and attract **economic development**
- that enhances the **livability and vitality** of the community

The Process

Studio Graphique has gone through the following steps to develop the project framework for the City of Oberlin Cultural Wayfinding Program:

THE PROCESS TO DATE

- › Review of the City of Oberlin Request for Proposal, website & background material
- › Discussion with the client core team
- › Discovery sessions with key internal and external stakeholders and steering committee
- › Driving & walking tours of the City
- › Meeting with Arts Organization stakeholders
- › Supportive research
- › Internal strategy sessions
- › Review session with stakeholders & steering committee
- › Project Framework development
- › Positioning statement development



DISCOVERY SESSIONS Summary

The following pages include a summary of the Discovery Sessions that took place on January 26-27, 2017.

NOTE: Results listed here have been translated in some cases for this format. The full report can be supplied if requested.

DISCOVERY RESULTS

DISCOVERY SESSION: JOURNEY MAPPING

Focus Area #1

Select and mark at least 7 of what you would consider to be Oberlin's major destinations.

Focus Area #2

Select and mark the public parking areas that you know of.

Focus Area #3

Mark what you would consider to be the PERCEIVED points of arrival into the city from all major travel paths in.

Focus Area #4

Mark what you would consider to be roads that offer the BEST experience driving into Oberlin.



If you had to describe how to get to Oberlin or a destination within the city, how would you do it? What areas would you tell people to avoid and why? What would you consider to be THE point of arrival?



DISCOVERY SESSION: WHAT A CHARACTER!

MOST APPROPRIATE	LEAST APPROPRIATE
Organic	Ornate
Colorful	subtle
EclectiC	STRUCTURED

Vote for the character word or words that best describe the City of Oberlin.
Use green for the words that best describe the character of the City of Oberlin and red for the words that least describe the character of the City of Oberlin.



ORGANIC
COLORFUL
ECLECTIC
BOLD
BRIGHT
CLEAN
REFINED
GRITTY
INTRICATE
STRUCTURED
SUBTLE
ORNATE

DISCOVERY SESSION: AFFINITY MAPPING—AUDIENCES



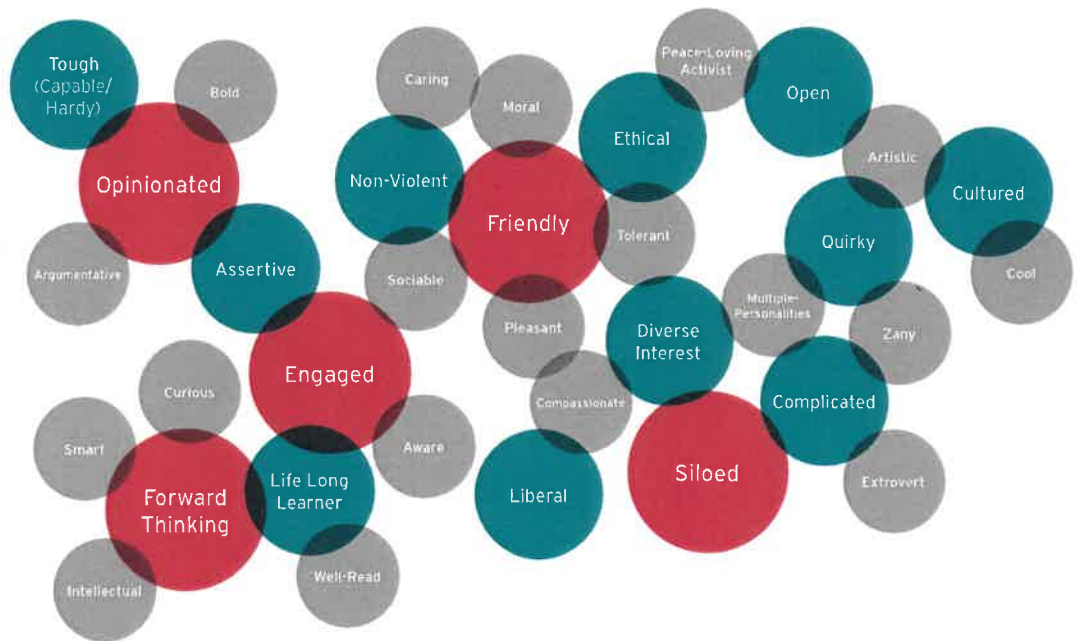
Affinity Mapping is a very simple but powerful technique for generating, grouping and understanding information.

DISCOVERY RESULTS

DISCOVERY SESSION: PERSONALITY TRAITS

When asked to describe the personality of Oberlin, participants offered a lot of descriptors centered around accepting and welcoming qualities, such as FRIENDLY, ETHICAL, OPEN and NON-VIOLENT balanced with words that convey a strong conviction like OPINIONATED, ASSERTIVE, and TOUGH.

Other common concepts included words about learning and thought, as well as diversity, art and culture.





Positioning

A forward-looking, internal statement that succinctly defines how your organization wants to be positioned in the marketplace. It should be an honest reflection of who you are today and how you would like to be perceived.

POSITIONING STATEMENT

Oberlin is a DISTINCT ADVANTAGE big-minded small town where a DISTINCT ADVANTAGE rich history has paved the way for a modern cultural PRODUCTS/SERVICES oasis. Live performances, art exhibits, thought-provoking lectures and independent shops and AUDIENCES restaurants attract residents, artists, students and visitors who appreciate the opportunity to END BENEFIT experience a uniquely inclusive community that nourishes the soul.

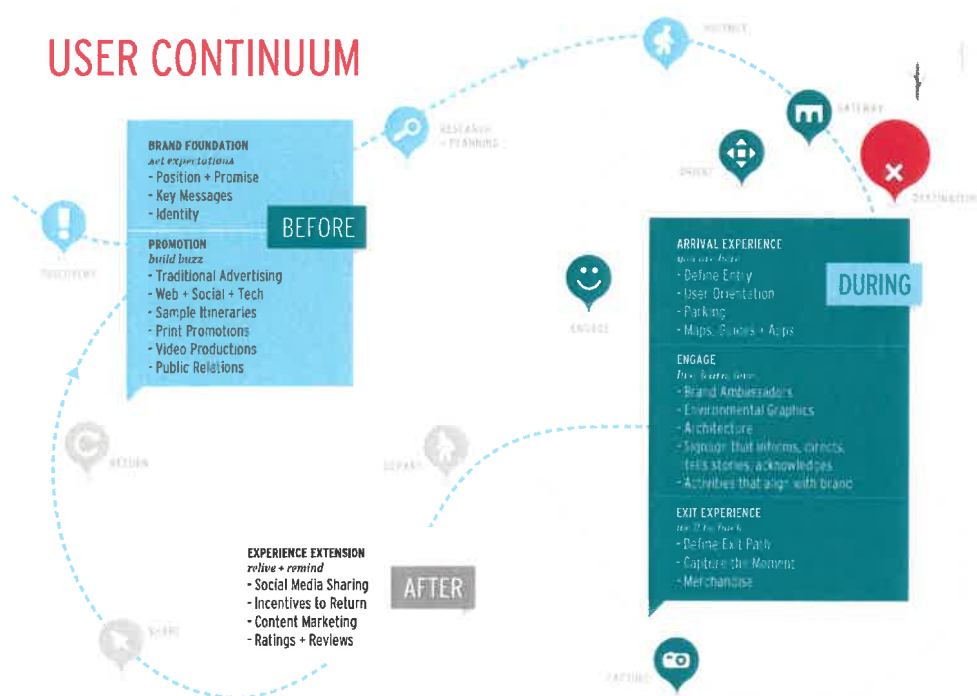


WAYFINDING Analysis & Evaluation

The following pages include a diagnosis of the City of Oberlin based on information gathered at the Discovery Sessions, audit of existing conditions and research.

Every experience can be defined in three time-specific categories: **BEFORE, DURING and AFTER.** The more you manage your brand at each of these stages, the more successful you will be. Setting expectations and consistently delivering throughout the entire experience is critical in creating a positive impressions.

Managing the touchpoints in each sequence of time is critical to presenting a great experience and lasting positive impression.



CURRENT WAYFINDING CHALLENGES

Signage is one of the **first physical interactions** with your site and will make an **impression**—either positive or negative—to visitors & guests.



Lack of Wayfinding Elements



Inconsistent Signage



Little visual representation of an "Arts Community"



No connection between centers/events



Lack of Parking Identification



PROJECT GOALS

- Develop an authentic and meaningful sign system to enhance the visitor experience and exceed their expectations.
- Highlight sense of place through consistent and exciting signage.
- Increase positive perception of the City of Oberlin with a consistent, recognizable and inviting sign family that creates a safe and welcoming atmosphere.
- Establish clear and concise messaging that utilizes consistent nomenclature, while aligning with the website, maps and other communication pieces.
- Produce easy-to-maintain and expandable signage to allow necessary changes and updates due to ongoing developments and events.
- Clearly identify public parking.
- Create a connective and experience for visitors so they stay longer, come back and invite others.



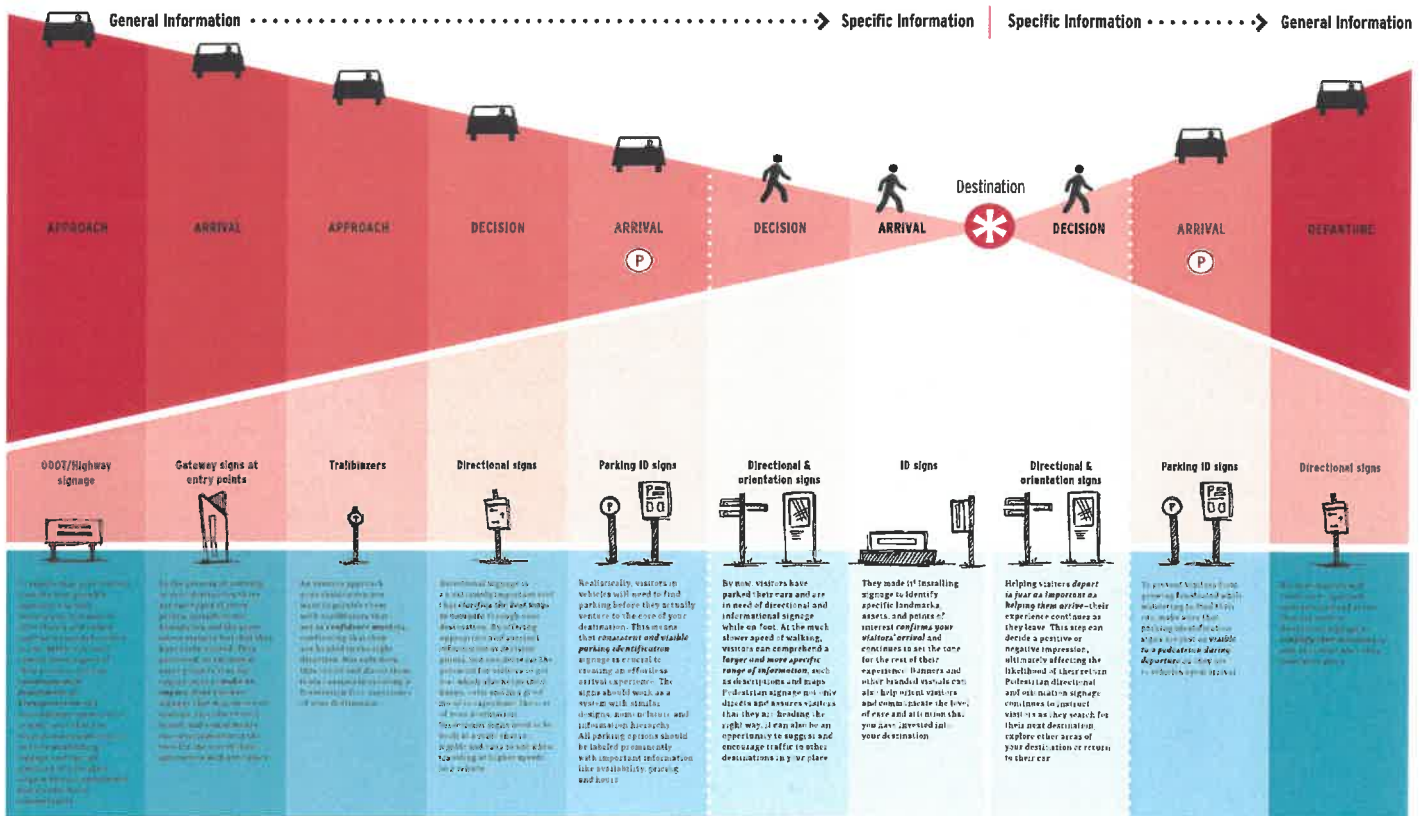
WAYFINDING

Philosophies

The following pages include philosophies and processes used to organize, manage and plan a comprehensive wayfinding plan for the City of Oberlin.

Images of signs shown on the following pages are for reference only and are not meant to represent conceptual design for the City of Oberlin Cultural Wayfinding Program.

WAYFINDING EXPERIENCE HIERARCHY




Nomenclature

a set or system of names or terms, as those used in a particular science or art, by an individual or community, etc.

—dictionary.com

The City of Oberlin Cultural Wayfinding Program should include nomenclature that is consistent from sign to sign and should be used across all communication media, including city and destination websites, printed materials and verbal directions from employees and staff.

A consistent nomenclature system is critical along the entire User Continuum to create a cohesive and connective experience.

APPROACH >>	ARRIVAL >>	APPROACH >>
ODOT WAYFINDING	GATEWAY ELEMENTS	TRAILBLAZERS
<p>State routes, highways and neighboring communities/districts utilize existing signage programs. Coordination with these surrounding areas is necessary to create a consistent wayfinding experience.</p>	<p>Gateway signs announce arrival when entering into an area, such as districts and cities. In addition to jurisdictional boundaries, they are often placed at points where one psychologically feels as if they have arrived.</p>	<p>A trailblazer is a sign featuring a singular direction to one destination. Trailblazer signage is usually installed on the primary roadway(s) that provide the most direct route and in close proximity to the destination.</p>
		
<p>Directs to City</p> <p>NOMENCLATURE - SIGN CONTENT Oberlin</p>	<p>Welcomes to City</p> <p>NOMENCLATURE - SIGN CONTENT City of Oberlin or Welcome to Oberlin (May incorporate Est. date, tag line, etc.)</p>	<p>Directs to Downtown or Single Destination</p> <p>NOMENCLATURE - SIGN CONTENT Downtown Oberlin</p> <ul style="list-style-type: none"> • Downtown Oberlin? • Historic Downtown? • Historic Arts District? • Downtown Arts District? <p>(Other single direction destinations may include Oberlin College, Kendal at Oberlin, Splash Zone, etc.)</p>

Sign Content Policy

For vehicular directional

turn, right-turn then straight-
r scale than city-wide



Directs to Major Destinations—Inner (Near or in Downtown)

NOMENCLATURE - SIGN CONTENT

First Church

Heritage Ctr




Oberlin Center for the Arts (OCA?)

Library

City Hall

Oberlin High School (High School?)

(could be on outer level signage)

ARRIVAL >>	DECISION >>	ARRIVAL >>
DOWNTOWN GATEWAY SIGNS	PARKING DIRECTIONAL SIGNS	PARKING IDENTIFICATION SIGNS
Downtown gateway signs are typically smaller in scale than city gateway signs and may contain unique design elements to represent the character of Downtown	A sign intended to direct vehicular traffic to public parking areas.	A sign intended to identify public parking areas.
 <p>Identifies Downtown</p> <p>NOMENCLATURE - SIGN CONTENT</p> <p>Downtown Oberlin?</p> <ul style="list-style-type: none"> - Downtown Oberlin? - Historic Downtown? - Historic Arts District? - Downtown Arts District? 	 <p>Directs to Public Parking</p> <p>NOMENCLATURE - SIGN CONTENT</p> <p>(P)</p> <p>Public Parking</p>	 <p>Identifies Public Parking</p> <p>NOMENCLATURE - SIGN CONTENT</p> <p>(P)</p> <p>Public Parking (Lot Number, Name, etc.)</p> <p>Owner/Operator</p> <p>Regulatory Information</p>

DECISION (ORIENTATION) >>

ORIENTATION KIOSK

A sign or kiosk, including a map, to provide pedestrians with orientation information within a larger area. The map could incorporate walking/biking distances in time intervals. This sign/kiosk may also contain updateable advertising panels to cross-promote events and encourage longer stays and return visits, as well as directional messages.

Sign Content Policy Recommendation:

Unlike vehicular traffic, pedestrians are able to comprehend larger amounts of detailed information. This is the opportunity to add auditoriums, halls, organizations, rooms and other destinations within a building or complex. This is also the point where smaller businesses, venues, restaurants, shops, etc. can appear.

The orientation kiosk/sign sets the stage for the pedestrian visitor.



Identifies Destinations within City / Orients Visitors / Cross-Promotes Venues & Events

NOMENCLATURE - SIGN CONTENT

Kendal at Oberlin

Splash Zone/Rec Complex

Allen Memorial Hospital

Westwood Cemetery

Plum Creek

Plum Creek Trail

Oberlin Depot

Underground Railroad Welcome Ctr (Future)

Donal Pease Memorial Bike Path (Bike Path ?)

Tappan Square

First Church

Heritage Ctr

Finney Chapel

Oberlin College

Oberlin College Admissions (Current)

Conservatory

- Warner Concert Hall
- Kulas Recital Hall
- Stull Recital Hall

Hall Auditorium

Hotel at Oberlin

- Oberlin College Admissions (Future)
- Berenbaum

Allen Memorial Art Museum

Knowlton Athletic Complex

Kohl Building

Clonick Hall

Oberlin Center for the Arts (OCA?)

- FAVA (Firelands Association for the Visual Arts)
- Uncommon Objects

Oberlin Public Library

City Hall

Municipal Court

Oberlin Senior High School

Weltzheimer Johnson House

Apollo Theater

Baron Gallery

Cat & the Cream

Slow Train

The MAD* Factory

Shops, dining, and other businesses/organizations may appear on the map and/or its directory

DECISION (DIRECTIONAL) >>**PEDESTRIAN/BIKE DIRECTIONAL SIGNS**

A smaller-scale sign intended to provide directional information to specific places at a pedestrian and cyclist level. Typically found near and in Downtown, on trails, at gathering places and in other areas with high volumes of foot traffic.

**Sign Content Policy Recommendation:**

Similar to vehicular directional signs, building names only should appear on pedestrian/bike directionals due to limited space and clarity of information.

Private business and organization names should not appear on pedestrian directional signs.

Directs to Major Destinations**PEDESTRIAN NOMENCLATURE - SIGN CONTENT**

Tappan Square	Allen Memorial Art Museum
First Church	Knowlton Athletic Complex
Heritage Ctr	Kohl Building
Finney Chapel	Oberlin Center for the Arts (OCA?)
Oberlin College	Oberlin Public Library
Oberlin College Admissions (Current)	City Hall
Conservatory	Oberlin High School
Hall Auditorium	Weltzheimer Johnson House
Hotel at Oberlin	Apollo Theater

TRAIL/BIKE PATH NOMENCLATURE - SIGN CONTENT

Splash Zone/Rec Complex
 Downtown (Historic Downtown? Historic Arts District? Downtown Arts District?)
 Oberlin College
 Westwood Cemetery
 Oberlin Depot
 Underground Railroad Welcome Ctr (Future) (Bike Path Parking?)
 Weltzheimer Johnson House?
 Oberlin Arboretum?

ARRIVAL

IDENTIFICATION SIGNS

Sign that identifies City-owned/operated facilities and parks.



Identifies City-Owned/Operated Facilities & Parks

NOMENCLATURE - SIGN CONTENT
To Be Determined

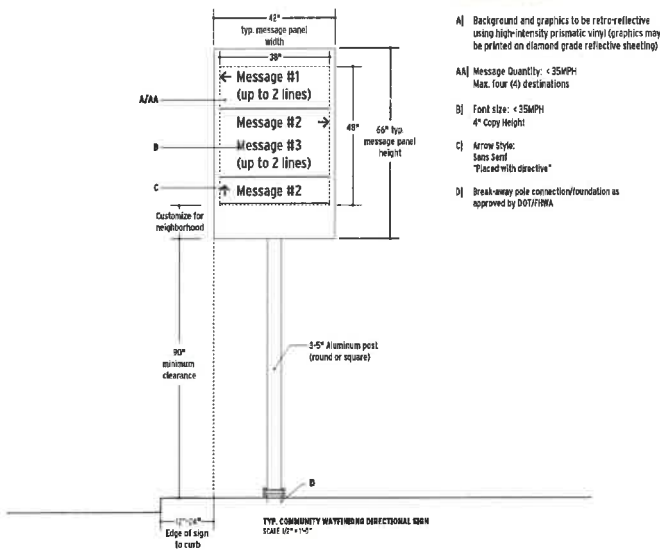
EXPERIENCE ENHANCEMENT / PLACEMAKING

BRANDED STREET SIGNS / BANNERS / PUBLIC ART / PAVEMENT MARKINGS / INTERPRETIVE

Elements beyond traditional wayfinding signage that help elevate a sense of place, community pride and visitor experience.



ANATOMY OF A COMMUNITY WAYFINDING SIGN



GENERAL GUIDELINES

- A) Background and graphics to be retro-reflective using high-intensity prismatic vinyl (graphics may be printed on diamond grade reflective sheeting)
- AA) Message Quantity: < 35MPH
Max. four (4) destinations
- B) Font size: < 35MPH
4" Copy Height
- C) Arrow Style: Sans Serif
"Placed with directive"
- D) Break-away pole connection/foundation as approved by DOT/FHWA

DESIGN CRITERIA & WAYFINDING STRATEGY

















- **USER FRIENDLY** | Text, graphics and mapping is legible and uncomplicated.
 - Directional messages will be limited to no more than 4-5 messages.
 - The users' initial destination for all vehicular wayfinding is Parking (closest to their destination)
- **AESTHETICS** | Harmonious in all respects, enduring design and appropriate scale.
- **MAINTAINABLE** | Cleanable, repairable surfaces, information easily changed or added, low maintenance and durable. Information hierarchy allows for an organized and manageable wayfinding program.
- **VANDAL RESISTANT** | No exposed access points, tamper proof screws and bolts, strong structures that are securely installed.
- **ORIENTATION** | Signs oriented for the greatest visibility for users.
 - Landscaping and other structures should enhance and not interfere with the visibility of the sign
 - Directional signs will be implemented at key decision points and announce only major visitor-based destinations. Private businesses, (corporate offices, restaurants, hospitality, etc.) are not typically placed on community wayfinding signs.
- **CONSISTENCY** | Sign/element design are consistent throughout the sign system and easily recognized as information hubs throughout the City.
 - Nomenclature should be consistent from wayfinding signs down to actual identification at the destination arrival point. This consistent language should flow down to pedestrian sign systems as well as destination language used by the places and institutions themselves.
 - Parking lot identification sets up a recognizable system, limits message lengths, and reinforces a unified parking experience
- **SYSTEM** | This program must consider the use of all wayfinding tools and not simply signage.
 - Sign messages should be communicated in a hierarchical progression from general to specific as visitors move from the outskirts of the city toward their destination.
 - Effective wayfinding provides the most critical information at the proper and relevant time



PROGRAMMING

The following pages utilize data from the previous sections of the Framework to create a preliminary sign type list, location plan and quantify recommended signage.

PROGRAMMING // BUDGET ESTIMATES

VEHICULAR SIGNAGE					
SITE SYMBOL LEGEND	QTY	BUDGET	SITE SYMBOL LEGEND	QTY	BUDGET
 Jurisdictional Gateway 	14	\$1,500-\$2,500 (unit) \$21,000-\$35,000 (total)	 Downtown Gateway 	2	\$4,000-\$5,000 (unit) \$8,000-\$10,000 (total)
 City Gateway (Perceived) 	4	\$10,000-\$15,000 (unit) \$40,000-\$60,000 (total)	 Parking Directional 	11	\$1,500-\$2,500 (unit) \$16,500-\$27,500 (total)
 Trailblazer 	8	\$2,000-\$3,000 (unit) \$16,000-\$24,000 (total)	 Parking Identification (Lot) 	5	\$3,000-\$4,000 (unit) \$15,000-\$20,000 (total)
 Vehicular Directional 	25	\$3,000-\$5,000 (unit) \$75,000-\$125,000 (total)	 Parking Identification (Street) 	TBD	NEW PANEL ONLY \$250-\$350 (unit)
VEHICULAR TOTAL <i>*Does not include Street Parking ID panel replacement</i>				69	\$191,500-\$301,500

- GENERAL NOTES
1. Budget numbers are based on historic data from past projects.
 2. Does not include experience enhancing/placemaking elements.
 3. Estimated are based on non-illuminated structures.
 4. Total does not include Studio Graphique design development, bid management or implementation oversight.

PEDESTRIAN/TRAIL SIGNAGE			
SITE SYMBOL LEGEND	QTY	BUDGET	
 Orientation Kiosk 	8	\$5,000-\$7,500 (unit) \$40,000-\$60,000 (total)	
 Pedestrian Directional 	13	\$4,000-\$5,000 (unit) \$52,000-\$65,000 (total)	
 Trail/Bike Directional 	19	\$2,500-\$4,500 (unit) \$47,500-\$85,500 (total)	
 City Facility/Park Identification 	20	POST-MTD. \$4,000-\$5,000 (unit) \$80,000-\$100,000 (total) W/ MASONRY BASE: add \$10,000-\$15,000 (unit)	
PEDESTRIAN/TRAIL TOTAL <i>*Does not include masonry option for Facility/Park ID</i>		60	\$219,500-\$310,500

FABRICATION/INSTALLATION	\$411,000-\$612,000
15% CONTINGENCY	\$61,650-\$91,800
TOTAL BUDGET ESTIMATE	\$472,650-\$703,800

RECOMMENDATIONS

RECOMMENDATIONS // WAYFINDING SIGNAGE

- 1 Implement a *vehicular signage system* that appropriately reflects Oberlin's *history* and *characteristics*. The vehicular system should be organized based on a *hierarchy of messages* (general information to specific information) as the visitor approaches downtown or more concentrated areas.
- 2 Develop a *pedestrian signage system* that helps *connect and cross-promote* venues and organizations within the arts community, encouraging longer stays and return visits. A key component in achieving this objective is to include *orientation/information kiosks* containing maps and possible advertising panels to promote events. *Trail/bike wayfinding* could include mileage information and maps at key locations.
- 3 Clearly *identify public parking* with consistent, well-placed signage. Parking lots could be *numbered or lettered* to help with wayfinding and regulatory messages should be more *welcoming/friendly*.
- 4 Create a *standard map* to be used across various media (signs, city website, brochures and by venues). *Consistency* in look and *nomenclature* will clarify wayfinding for visitors and promote a more *comprehensive/connected experience* throughout the city.
- 5 Institute a *content policy* for who/what is allowed on each sign type and who takes priority on signage to manage messaging and signage clutter. Excess information can be confusing and leads to a less effective sign system.

RECOMMENDATIONS // BEYOND WAYFINDING SIGNAGE

- 1** Identify spaces that have an opportunity for future *public art installations* to help promote Oberlin as an *"Arts Community"*. (Avoid murals and anything that conflicts with existing architecture or is difficult to maintain).
- 2** Include *historic/interpretive* story-telling signage to improve the overall visitor experience, promote Oberlin's great history and encourage pedestrian/bike travel and exploration.
- 3** Add additional *placemaking and branding elements* within the city footprint to better define Oberlin as an arts destination. Examples could include a banner program, landscaping, street furniture, pavement markings, etc.
- 4** Revamp the city *website* to better *promote* and *connect* venues, organizations and events *under one "umbrella"* and to help set appropriate expectations about the city and what it offers. The website should help visitors easily *plan a trip to Oberlin*. Consider a mobile/responsive design for visitors on the go.
- 5** Use the *consistent nomenclature* established by the program to *populate google maps* with accurate information on Oberlin venues and businesses.

A large teal rectangular area occupies the center of the page. In the middle of this area, there is a white icon consisting of a 4x4 grid of dots, with the top-right dot missing. To the right of this icon, the words "NEXT STEPS" are written in a white, bold, sans-serif font.

▣ NEXT STEPS

NEXT STEPS

- Approval of Wayfinding Framework
-
- Establish thematic ideas for brand/signage look and feel via Mood Boards
 - Sign Program Design, starting with Conceptual Sketches – 3 concepts for 3 sign types
 - Message Programming and updates to the Sign Location Plan
 - Present Conceptual Design and Programming to Steering Committee



Guide

**WAYFINDING, BRANDING AND COMMUNICATIONS
FOR PLACES WITH PEOPLE-TRAFFIC**

13110 Shaker Square, Suite 101
Cleveland, OH 44120

info@guidestudio.com
216-921-0750

guidestudio.com

WAYFINDING ANALYSIS & REPORT

PLANNING FOR WAYFINDING IN YOUR COMMUNITY

Developing a Wayfinding Master Plan is the most comprehensive process to determining what your community needs, how it will address issues of user/visitor experience, how a the sign program can visually improve aesthetic or support your communities brand image — essentially what the program will look like and what it will take to move it forward.

When we create a Wayfinding Master Plan, there are many steps we take to ensure we are developing the right type, right fit sign program for your community. It often involves site visits, engagement meetings with stakeholders, surveys to uncover experience issues. All this is necessary when a community is ready to tackle the development of a Sign Program. While a smaller investment compared to other infrastructure projects, a Wayfinding Master Plan is still an investment of time and money. Many communities have told us they don't know where to begin when planning to take on a Community Wayfinding Project.

DETERMINING YOUR WAYFINDING NEEDS

Every community is different, therefore the needs for community identity and wayfinding will be different. The Wayfinding Analysis is one of the steps we tackle when developing a Wayfinding Master Plan and Sign Program for a Community. It allows us to determine the type and size of program a community will need.

We have refined this process so that we can help communities pre-plan for a Signage and Wayfinding Initiative. This doesn't take the place of developing a Master Plan, but it will complete an essential step in the process and provide a more accurate and realistic view of your needs.

The Wayfinding Analysis and Report can answer the following questions:

- What type of wayfinding program do we need? What types of signs or tools will be necessary in my community?
- How many of each of these sign types will we need? What could they cost?
- What other steps and costs will be associated with developing this Wayfinding Program?
- What are some potential methods for financing and implementing this program?

HOW WE DO IT

PROCESS

In our Master Planning work, we spend a lot of time visiting your community and engaging with your people. For the Wayfinding Analysis, we have developed tools that will allow us to determine your issues and needs remotely. *Site Visits are not included in this process.*

Week One: Kick-off Conference Call with your team and submission of Wayfinding Survey. The Survey is electronic and can be sent to as many community representatives as you choose.

Week Two: Survey's completed and Guide begins to analyze the travel paths and decision points in your community via Google Maps and Street View using the answers supplied in the Survey.

Week Three: Report compiled and presented via online meeting.

WHAT DOES THE REPORT CONTAIN?

DELIVERABLE

- 8.5 x 11 full color PDF report
- **Wayfinding Survey Summary**
- **Program Recommendation:** type of Wayfinding intervention we recommend for your community, based on Survey and Analysis. This includes identification and visual examples* of the types of signs, elements, graphics and communication that will address wayfinding, identity and placemaking issues:
 - Pedestrian (Orientation, Directories, Directionals)
 - Vehicular (Destination, Parking)
 - Multi-modal (considers Pedestrian, Bikes and Vehicles)
 - Gateway (Identifying entry to city or community districts)
 - Placemaking (Visual elements that express your brand identity)
- **Program Budget:** Through the Wayfinding Analysis will identify approx. quantities for each sign type/element recommended and we will provide budget ranges for the costs of each type. Ranges indicate complexity of design and structure types. Unit costs and summarized costs based on each sign type/element will be provided. *Budget numbers are based on historic data from built projects.*
- **Next Steps:**
 - Outline and costs associated with the remainder of the planning, design, and implementation process
 - Recommendations for project process, timeline and who should be involved
 - Recommendations for how the work and program can be phased over time

**Examples from historic projects or sample sketches. Conceptual design is not included in this process.*

HOW WILL IT HELP YOU

Wayfinding
Analysis & Report
\$7,500

THE VALUE OF THE WAYFINDING ANALYSIS AND REPORT


Wayfinding Master Plan consulting services can range from \$18,000 — \$25,000 depending on the size and complexity of the community's wayfinding needs. The design development of a full Sign Program can reach \$40,000+. This first step will allow your community to gain clarity on what your needs might be and help determine a realistic path forward.

The information contained in this report is the first step in any Wayfinding Master Plan and will be customized to your community's wayfinding needs — providing an excellent supplement when applying for grant dollars or simply seeking support for developing this type of program.

If your Community chooses to continue the development of your Signage and Wayfinding Program with Guide Studio, the costs of the Wayfinding Analysis and Report will be deducted from the cost of the services recommended to complete your Master Plan. Many times this process may allow us to cut down on unnecessary steps in planning and development.

CITY OF *Beachwood*
INTEROFFICE MEMORANDUM

TO: Public Works Committee
Justin Berns, Chair
Alec Isaacson, Member
Barbara Bellin Janovitz, Member
James Pasch, Member

FROM: Tina M. Turick, Assistant Administrative Officer 

DATE: August 15, 2018

SUBJECT: August 20th Work Session – Deer Management

The Mayor met with members of Shaker Heights City Council regarding their deer management efforts as well as Mr. James Mariano from Precision Wildlife Management LTD. Mr. Mariano has provided Deer Management Services to the City of Shaker Heights.

The Mayor asked me to provide the following information in preparation of the discussion Monday evening:

1. Email dated July 30th from James Mariano including his attachment regarding Deer Management in the City of Beachwood
2. Information from the City of Shaker Heights

The Mayor will provide an overview of the process along with steps that must occur before a deer management program can be implemented. The first step is to provide Council with this information to determine whether or not there is interest in moving forward.

T.M.T.

Cc: Martin S. Horwitz, Mayor
Diane Calta, Law Director
Larry Heiser, Finance Director
Gary Haba, Police Chief
Chris Arrietta, Assistant Service Director
Whitney Crook, Clerk of Council

Enclosure: Precision Wildlife Management Documents
City of Shaker Heights Documents

Tina Turick

From: James Mariano <marianojames@hotmail.com>
Sent: Monday, July 30, 2018 8:51 PM
To: Tina Turick
Subject: Beachwood Deer Management
Attachments: Beachwood Current sit 2018.docx; deer report websitev2-3.pdf

Tina,
I hope this email finds you and yours in good health and good spirits. Attached is a document to assist you, the Mayor and your team to evaluate the right long term deer management solution for the City of Beachwood.

I recommend that you consider utilizing the Shaker Deer Task Force's methodology in assessing your constituents concerns as it relates to deer management. As you know it is critical to obtain "buy in" from the constituents concerning deer management. Please consider getting the survey to the residents as soon as possible. I know the Mayor mentioned that you have been receiving calls concerning deer issues.

In an effort to prevent an additional 25% increase in the deer population for 2019 and initiate the deer management program in January of 2019, the majority of the stakeholders must be in alignment and a sense of urgency developed by October of 2018.

I recommend you consider speaking with Mr. Geoff Westerfield, Assistant Wildlife Management Supervisor with the Ohio Department of Natural Resources, Division of Wildlife, as he is a wealth of information and has assisted many cities in the deer management process.

I am happy to assist you in your accelerated planning process, please provide me with a couple of dates that you, the Mayor and his team can meet. I am also available to meet with council and provide them an overview of the deer management process. I know first hand that you have deer management challenges as I have watched deer on the Beachwood side of Shaker Boulevard and Sulgrave on many evenings. Please contact me if you have any questions. Thank you.

Regards,

Jim Mariano
President
Precision Wildlife Management LTD.
216-406-5418

City of Beachwood Deer Management

July 30, 2018

Precision Wildlife Management LTD

Current Situation

- The City of Beachwood is considering developing and implementing a deer management program. Deer Management is a long-term commitment.
- The City of Beachwood conducted an aerial deer survey in 2015 and reported that there were 35 deer per square mile. Deer numbers in good habitat with low predators, average a 20% to 30% increase per year with no culling. Doe's average 1.7 fawns per year. Utilizing a conservative estimate, there are approximately 293 deer in Beachwood today!

2015	Deer Aerial Study	150 Deer
2016	25% increase	187 Deer
2017	25% increase	234 Deer
2018	25% increase	293 Deer

- The City of Shaker Heights developed a Deer Task Force Committee and in December of 2015 they published their findings. (See attached Shaker Heights Report of the Deer Task Force.)
- Shaker Deer Task Force made their recommendations based on the following:
 - 2015 Aerial deer survey
 - Resident Survey
 - Statistics gathered from public works and the police department:
 - Deer calls for service
 - Deer vehicle accidents
 - Number of dead deer found (Possible unreported accidents)
 - Number of deer euthanized by the police
- Based on the research of the Deer Task Force they recommended educating and informing the residents concerning deer, continue to collect data concerning deer management and develop a deer sharpshooting program to present to council.
- The City of Beachwood and Shaker Heights are similar in area and both have constituents that have come to expect exceptional customer service.
- Deer management is an emotional subject and it is important to establish "buy in" from the constituents as well as the stakeholders.

Challenges

- In order to initiate the deer management program in 2018, a time line and priorities need to be established.
- Surveys and information specific to Beachwood need to be obtained to evaluate the constituent and stakeholder's support of a deer management program. The deer management program is a long-term commitment and must be supported by the executive leadership of the City of Beachwood, the stakeholders and the majority of the constituents.
- Surveys to residents need to be sent out as soon as possible and statistics need to be compiled and evaluated. Survey results as well as the statistical information need to be tabulated and evaluated by the first week of October.
- City Council needs to evaluate the deer management plan and streamline the appropriation of funds and authorization process.
- A vendor needs to be selected and a comprehensive deer management plan needs to be formulated, complete with specific program goals that can be measured and evaluated. The deer management plan needs to be approved by the Mayor or his designee and submitted to the Department of Natural Resources, Division of Wildlife, with additional required documents.
- Deer density and patterns need to be established and considerations on potential bait sites evaluated.
- Safety assessments and evaluations on all bait sites need to be conducted, as operating in a densely populated suburban environment is unforgiving.
- Protecting the city, police department and their reputations.
- Since deer management is an emotional subject the majority of residents want the deer population reduced, however, they do not want to know about it or see it.

What Beachwood needs in a Deer Management Partner

- Highly trained and experienced precision marksmen capable of safely and effectively operating in a suburban area
- Discerning precision marksmen trained and experienced in making critical decisions in a stressful environment
- Experienced professionals that understand deer movements and patterns in a suburban environment, specifically Beachwood.
- Understanding the expectation and requirements of quality service from Beachwood residents
- Professional working relationship with the ODNR, Division of Wildlife
- Trust and relationship with the City and executive leadership team.
- Confidence the partner will leverage the City to manage the risks associated with deer management throughout the entire process
- Trusted professionals that understand the expectations of the city and the police department as it relates to operations, communications, public relations and briefing
- One stop shop/turn key solution

Value Case

Precision Wildlife Management LTD provides a seamless turnkey solution to deer management in Beachwood. Precision will leverage Beachwood to help manage the risks through the entire deer management process, meeting the needs of their constituents and delivering results as it relates to deer management. An added benefit with this solution is that it will not impact police manpower.

Precision Wildlife Management LTD provides the following exceptional value:

- Highly trained professional precision marksmen that are critical decision makers who have demonstrated the ability to operate under stress in an unforgiving suburban environment
- Years of experience operating in Shaker Heights
- Have earned the respect and trust of the Police Executive Leadership Team, the Shaker Deer Task Force and Shaker's Executive Leadership Team
- Demonstrated the ability to overcome challenges and obtain results
- Professional working relationship with the ODNR, Division of Wildlife
- Unique understanding of the high expectation of quality service from Beachwood residents and the stakeholders
- Experienced professionals that understand deer movements and patterns in surrounding areas.
- Experienced in following the chain of command and understanding the sensitive nature of deer management and the need to protect Beachwood reputation

Commitment

The Precision Team is committed to providing professional highly skilled and experienced marksmen and services. Precision is focused on results while providing exceptional customer service. Precision has the best-trained precision marksmen in the industry who understand managing the risks associated with culling deer in Beachwood.

We bring to the table a turnkey business solution along with experience in operating next-door in Shaker Heights. Safely and humanely harvesting deer is our number one priority. We have established a great working relationship with the Department of Natural Resources, Division of Wildlife.

We have earned the trust of the Shaker Heights Deer Management Task Force as well as Shaker's Executive Leadership Teams at City Hall, Service Department, Police Department as well as the DNR.

Precision understands the need to protect Beachwood's excellent reputation. For the past two culling seasons we have safely and humanely met our goal of deer to be harvested next door in Shaker Heights. We have overcome challenges and have not experienced any major issues. Many citizens as well as the surrounding communities are not even aware that Shaker Heights had a deer management plan.

Precision is looking forward to partnering with Beachwood to manage the deer population for the citizens of Beachwood. I am available to meet with the Mayor and his team to discuss consulting services. I would be happy to present an overview of a deer management program to members of council. Please contact me if you have any questions or if I may be of assistance.

Precision Wildlife Management LTD.
216-264-9777
james.mariano@precisionwildlife.us

JAMES A. MARIANO

Summary of Qualifications

Customer focused consulting professional with proven success in deer management strategies, specializing in precision culling in suburban areas.

- President, Precision Wild Life Management LLC
- 31 plus years in Law Enforcement Management including roles as SWAT Commander and leader within the Uniform Division, Investigative Bureau, Police Information Unit and Deer Management Program
- Proven experience in City Council presentations, stakeholder alignment, public relations and conflict resolution
- Developed, led and managed the Shaker Heights Deer Management Program
- Developed a professional working relationship with the Department of Natural Resources, Division of Wildlife ensuring compliance with state protocols and documentation
- Trained and deployed as a police precision marksman and have been involved in numerous high-risk incidents as an operator and incident commander
- 25 plus years of experience as a state certified firearms instructor to include scoped sighted precision rifle
- In depth knowledge and understanding of the complexities and sensitive nature of developing, implementing, managing, and evaluating a deer management program

Core Competencies

- Safely and Humanely culling deer in an urban environment
- Extensive training and operational experience in risk management
- Results Oriented Principle Centered Leader
- Excellent communications skills in stakeholder alignment, conflict resolution and de-escalation
- Project Management
- Law Enforcement consulting, mentoring and coaching
- Proven effective decision maker in high-risk time sensitive operations
- Mission driven and accountable

Risk Management Competencies:

Identified as a top performer in risk assessment and management. Led and managed team members and resources in highest risk law enforcement activities. Proven experience in identifying and managing liability exposure and political ramifications.

Public Relations Competencies:

Experience in developing and managing a deer management strategy acceptable to the public and assessing concerns and developing marketing and operational strategies in alignment with goals. Experience in working with media relations specialist to leverage organizations and cities in communicating effectively to the public.

Technical Competencies:

State certified firearms instructor and police precision marksmen trainer

State certified police precision marksmen

Lead Instructor for state sponsored basic police, ranger academies and the Ohio Tactical Officers Association. Trained multiple agencies in critical incident management and related fields.

Mentored and coached police supervisors and provided consultation for police executives. Conducted vulnerability assessments and pre-operation mission planning/risk management evaluation in numerous operations to include presidential visits and critical incidents.

Served as a panel member for a Department of Natural Resources training conference on deer management.

Professional Experience

Shaker Heights Police Department (SHPD), April, 1987 – February 2018

- Lieutenant, responsible for Investigative Bureau, Police Information Unit, Property Management, Jail Management and Deer Management to include budgets and operations.
- Served on the SHPD SWAT Team from June 1987- September 2008. Positions held included SWAT Commander, operator, team leader, team training coordinator, precision marksman. Former Special Operations Commander for 18 SWAT Team Members, 8 Hostage Negotiators and an operational assistant. Served as Commander for B and D Platoon responsible for two Platoons and three sergeants.
- Former Assistant Commander SHPD Basic Academy. Responsibilities included Academy and training budgets and marketing and operation of the OPOTA sponsored basic academy and the bailiff's academy.
- Former Training Coordinator responsible for coordinating and managing training for the entire police department to include the SHPD SWAT Team and also for implementing and managing the Field Training Program.
- Served on the SHPD Accreditation Committee. Provided documentation of standard operating procedures, general orders, and assisted on site assessors.
- Developed, coordinated and implemented SHPD First Responder Program which included Immediate Action Rapid Deployment, Mobile Field Force,

Officer / Citizen Rescue and Assault Team / Fire Team Tactics.

- Developed, implemented, and supervised department lethal force management program. Responsibilities included writing and implementing SHPD General Orders for Response to Threats, Lethal Force Management, SWAT Protocols, Barricade/Hostage Situations, Crowd Control and Homeland Security.
- Secured over \$300,000 in private donations for a Homeland Security Project to obtain a SHPD Rescue Vehicle and tactical tools for the SHPD.
- Involved in numerous high-risk incidents since 1987 as an operator and incident commander. Conducted vulnerability assessments and pre-operation mission planning / risk management evaluation in numerous operations to include presidential visits and critical incidents.

Cleveland Heights Police Department (CHPD) June 1995 - April 1987

EDUCATION

- Bachelor of Science, Business Administration, Bowling Green State University, May, 1983
- Instructor Training School, Ohio Peace Officers Training Academy
- Certified State Use of Force Instructor
- Certified State Weapons Instructor (Semi-Auto handgun, Shotgun, Police Carbine, Sub-Gun, Scoped Precision Rifle)
- FBI Hostage Negotiation Commanders Seminar April 2007
- Graduate of the Police Executive Leadership College, November, 1995
- Graduated with honors from the Southern Police Institute, University of Louisville Staff and Command School, May, 1996
- Graduated with honors from the FBI National Academy March 2001

AFFILIATIONS

- Member of the National Wildlife Control Operators Association NWCOA
- NWCOA Goose Management Specialist

AWARDS

- The Right Stuff Award
- Excellence in Leadership Award
- Police Officer of the year
- Two citations for life saving efforts

FUNDRAISING

- Participated in the National Multiple Sclerosis "Pedal to the Point" fundraising event with members of the community and Citizens Police Academy Alumni for the past 23 years and raised over \$115,000. Participated in the Law Enforcement United Road to Hope bike ride raising over \$15,000 for children of law enforcement officers who have died in the line of duty.



SHAKER HEIGHTS

REPORT OF THE DEER TASK FORCE December 2015

TABLE OF CONTENTS

- I INTRODUCTION**
- II BACKGROUND OF DEER IN OUR REGION AND GENERAL DESCRIPTION AND BEHAVIOR OF DEER**
- III DESCRIPTION OF DEER PROBLEM IN SHAKER HEIGHTS**
- IV DEER MANAGEMENT OPTIONS**
- V CONCLUSIONS AND RECOMMENDATIONS**

APPENDICES

- Appendix A: List of Unpalatable Landscape Plantings**
- Appendix B: List of Repellents**

I. Introduction

The City of Shaker Heights is a first ring suburb of Cleveland, Ohio and comprises six square miles, most of it (4.7 square miles) residential. More than 7% of the land use is open space and parklands, including the Shaker Heights Country Club; the Van Aken Boulevard and Shaker Boulevard medians, on which the GCRTA rapid transit operates; and the Shaker parklands which include Lower Lake, Horseshoe Lake and Park, Green Lake, and Marshall Lake. The City, with its wooded parklands, beautiful residential gardens, and lakes and streams, has created an excellent habitat in which the deer population is flourishing. As the deer population grows, so does deer-human interaction, along with the pleas of our residents to address growth in numbers of deer and reduce the negative impacts of deer in our community.

This report will provide background on the deer population in our region and a description of the behavior of deer; a description of the current deer problem in Shaker Heights; methods of deer management; and recommendations to the Mayor and Council on how to address the problem. Sources used to inform the work of the task force include:

- Cornell Cooperative Extension's publication: *Managing White-Tailed Deer in Suburban Environments: A Technical Guide*
http://wildlifecontrol.info/pubs/Documents/Deer/Deer_management_mechs.pdf
- Lake Erie Allegheny Partnership for Biodiversity (LEAP) *Position Statement on White-Tailed Deer Management* [http://www.leapbio.org/content/white-tailed-deer/White-tailed Deer Position Statement.pdf](http://www.leapbio.org/content/white-tailed-deer/White-tailed%20Deer%20Position%20Statement.pdf)
- Rick Tyler, Retired Natural Resources Manager, Cleveland Metroparks
- Nick Mikash, Natural Resource Specialist, City of Mentor, Ohio
- Survey responses submitted by Shaker Heights residents
- Shaker Heights Police Department deer incident reports and calls for service
- Shaker Heights Public Works Department deer reports and calls for service

Respectfully submitted by the Deer Task Force:

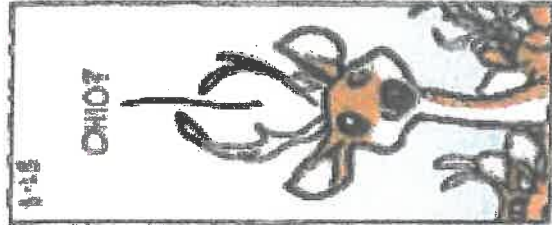
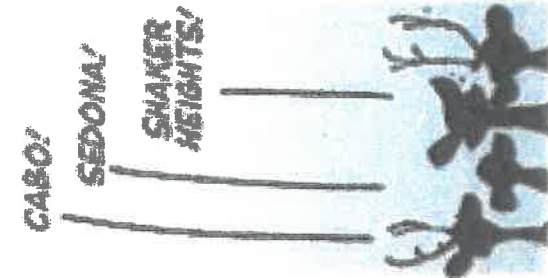
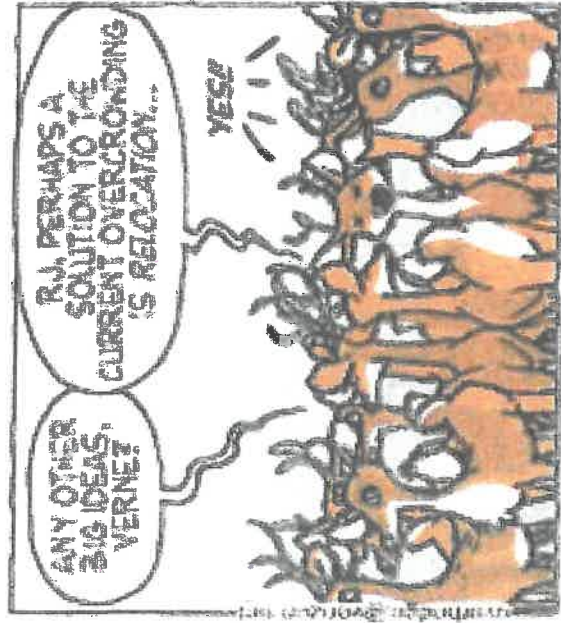
James Brady, member of Council
Neil Dick, resident
Kyle Dreyfuss-Wells, resident
Kevin M. White, resident
Anne E. Williams, member of Council

Staff

Jeri E. Chaikin, Chief Administrative Officer
D. Scott Lee, Chief of Police
Jeffrey DeMuth, Commander, Shaker Heights Police Department
Patricia Speese, Director, Public Works

December 2015

Fri. Aug 28



II. Background of Deer in our Region and General Description and Behavior of Deer

The white-tailed deer populations within our region share a similar history to other deer populations across North America. White-tailed deer were nearly eliminated from the region in the late 19th and early 20th centuries, at which time conservation measures were enacted to establish sustainable populations. White-tailed deer populations have recovered from historic lows, and today, with few remaining predators, high reproductive rates and survivorship, local ordinances which prohibit hunting, adaptive food habits, supplemental feeding, and low disease-related mortality, the frequency of deer-human interactions has increased in many areas.

White-tailed deer have excellent senses and physical abilities. They monitor their surroundings and locate potential danger using a combination of smell, hearing, and sight. Deer have evolved as a prey species and can detect and avoid many potential threats. When threatened, deer can attain speeds of 36 miles per hour and easily jump an eight-foot obstacle.

White-tailed deer are extremely adaptable, both in habitat and diet selection. Deer are an edge species, faring well in transitional areas between forests, agriculture, grasslands, and even suburban landscapes.

Suburban areas provide high-quality, high calorie, and easily accessible foods in the form of gardens, ornamental plantings, and fertilized lawns, while nearby woodlands offer daytime refuge. Plant species richness is higher in residential areas than in wooded habitats. Suburban areas are free of hunting and natural predation.

Mating behavior occurs primarily from mid-October through December in most of the white-tailed deer range. Female white-tailed deer generally breed for the first time when they are yearlings (14 to 18 months in age). In areas with good forage, six-month-old fawns may breed, but older females will produce more offspring. Yearling does typically produce one fawn, whereas adults (2.5 years in age or older) commonly produce twins or sometimes triplets, when conditions are favorable, such as those found in suburban areas. Deer have a high reproductive potential and populations can increase quickly.

Fawns are born mid-May through July and spend the first few weeks of their life hiding. They begin to follow their mothers within a few weeks.

Deer become very familiar with their home range, which enhances survival, and consequently, they seldom leave it. If forced from their home range, they usually return within a few days.

The negative impacts associated with an overabundance of or excessive browsing by deer are well-documented:

- A deer population that is out of balance with its native ecosystem has detrimental impacts by directly and indirectly affecting native plant and wildlife populations, habitat quality, and ecosystem processes.

- When deer become overabundant, they cause a decline in biodiversity (the number and variety of species of living organisms) in natural areas and reduce the ability of native plants to survive and reproduce. Deer browsing reduces the height, vigor and reproduction of plants through the repeated removal of stems, leaves, and flowering parts of plants. If left uncontrolled, the deer population impacts the health of our wooded areas by browsing trees on public and private land.
- Deer browsing negatively impacts wildlife that needs woodland understory for forage, nesting, and cover. Deer browsing can, for instance, significantly reduce vegetation that birds use for foraging, escaping predators, and nesting.
- Deer browsing and antler rubbing can cause damage to landscape and garden vegetation.
- An overabundant deer population causes a reduction in the availability of forage, which leads to the decline in the health of individual animals.
- Overabundant deer populations hasten the spread of disease that impact deer (e.g., chronic wasting disease) and humans (e.g., Lyme disease).

III. Description of Deer Problem in Shaker Heights

Reports of deer in Shaker prompted City Council to have a public work session on the issue in March 2010, at which time the City Animal Warden believed, based on his knowledge of deer in Shaker, it would be some years before the deer population would become significant. However, based on the increasing number of complaints about deer aggression and damage to gardens, Council held another work session in October 2012.

Table 1 shows the total reports of deer incidents and observations have almost doubled since 2010. (These incidents and observations do not include the results of the resident survey described later in this report.) The Department of Public Works receives reports of dead deer found on the ground (usually the result of deer fights; attempting to jump over fences; or otherwise injured) and deer lingering or living in yards. The Police Department reports on numbers of deer/vehicle accidents; and injured and dying deer which have been dispatched (humanely put down). Police also receive calls regarding the observation of deer, usually from residents concerned that deer are preventing them from access to their driveways or yards, or on the street.

Table 1 – Resident Calls Concerning Deer Since 2010

Public Works	2010	2011	2012	2013	2014	2015 (thru Sept.)
Dead Deer	12	16	20	25	25	24
Deer in Yard	16	19	33	35	29	36
Subtotal	28	35	53	60	54	60

Police	2010	2011	2012	2013	2014	2015 (thru Sept.)
Deer/Vehicle Accidents	5	3	6	2	6	4
Injured Deer Dispatched	3	1	4	0	4	5
Deer Observed	25	19	26	31	43	32
Subtotal	33	23	36	33	53	41
TOTALS	61	58	89	93	107	101

Staff at the Nature Center at Shaker Lakes report the deer have had significant negative impacts on the health of the forest at the Nature Center and throughout the Shaker Parklands. A healthy, diverse forest has an understory full of native shrubs. A forest with too many deer does not have this important layer. Most of the parklands forest lacks this important shrub layer. Shrubs that do exist are non-native invasive plants that deer do not eat. These types of plants also decrease the diversity in our Parklands.

In an attempt to initiate a collaboration with neighboring cities which are also experiencing an increase in deer and deer incidents, Shaker Heights Mayor Earl Leiken convened a group of east side suburban mayors in February and July 2013. These meetings resulted in the formation of the Eastside Wildlife Management Partnership (EWMP), comprising the cities of Beachwood, Cleveland Heights, Lyndhurst, Mayfield Heights, Pepper Pike, Shaker Heights, South Euclid, and University Heights. The EWMP hired Davis Aviation in December 2014 to perform an aerial infrared survey of the 26,837 acres within the boundaries of its eight cities. Aerial infrared imaging utilizes low flying aircraft fitted with a high-resolution thermal imager. Aerial infrared studies are currently considered an accurate way to estimate deer populations.

The counts for Shaker Heights revealed a density of 10 deer per square mile. Deer begin to adversely affect their natural surroundings at 10-20 deer per square mile. Of the eight cities in the EWMP, Pepper Pike had 39 deer per square mile. Beachwood had 35 deer per square mile, and the other five cities had a deer density of between 8-15 per square mile. Pepper Pike has since initiated a culling program.

Mayor Leiken appointed Shaker's Deer Task Force in May 2015. The task force heard presentations from Mr. Rick Tyler, Cleveland Metroparks Retired Natural Resources Manager; and Nick Mikash, City of Mentor Natural Resource Specialist, who each have experience managing deer culling programs.

Shaker's Deer Task Force created a resident survey to collect information reported by residents about deer damage and incidents with deer. As of December 1, 2015, 350 responses were received.

Of particular significance are the responses to questions about the number of deer in Shaker; the level of concern about deer in neighborhoods, and residents' comfort level with deer. Chart 1 below shows that over 73% of the respondents report that the number of deer in their neighborhoods is increasing.

Chart 1

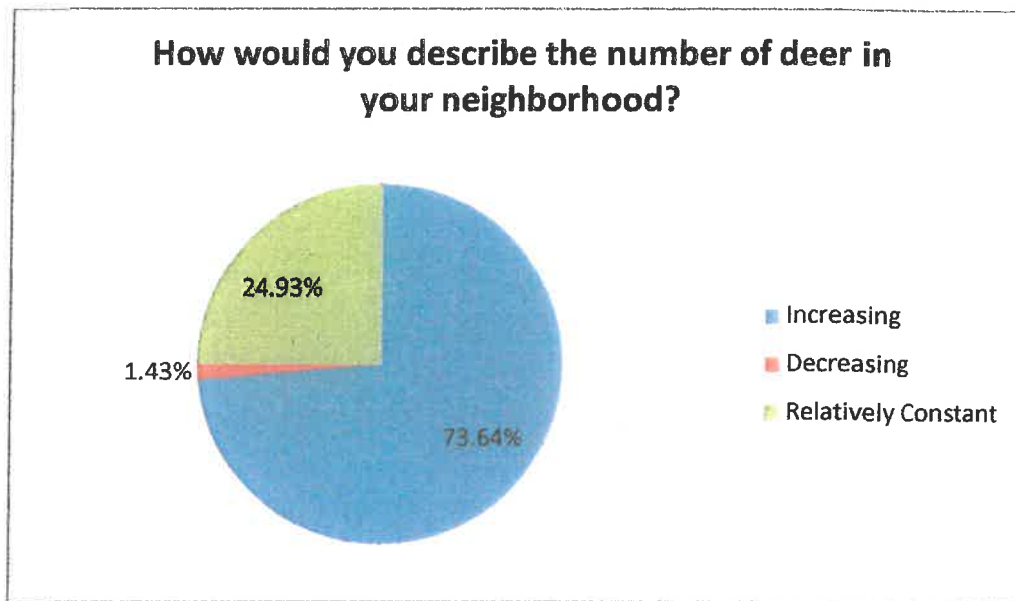
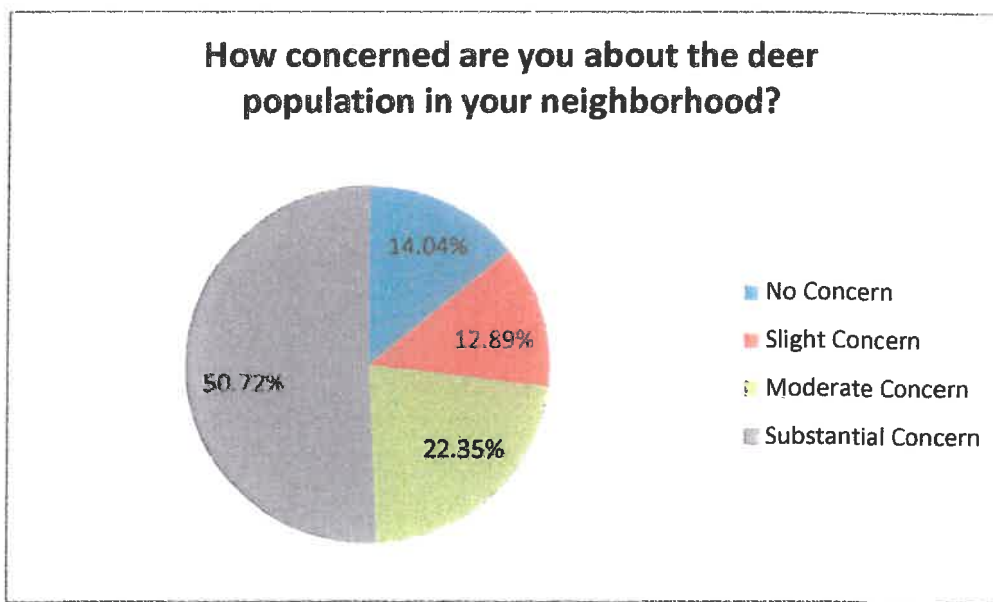


Chart 2 shows that over 73% of the respondents feel that the deer population is of moderate or substantial concern.

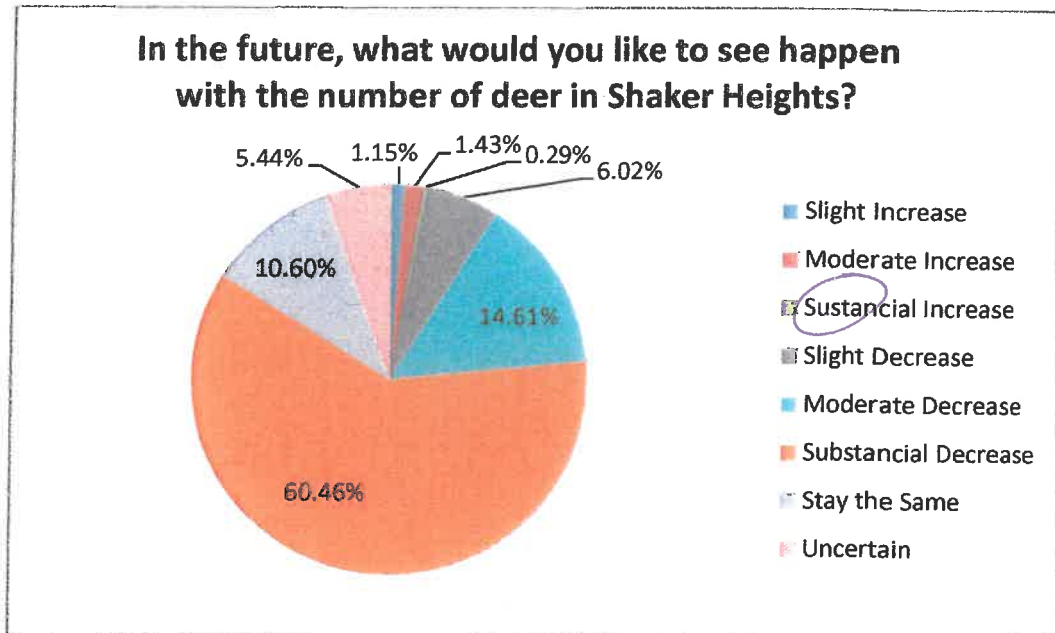
Chart 2



51%

Chart 3 shows that over 75% of those who completed the survey would like to see a moderate to substantial decrease in deer in Shaker Heights.

Chart 3

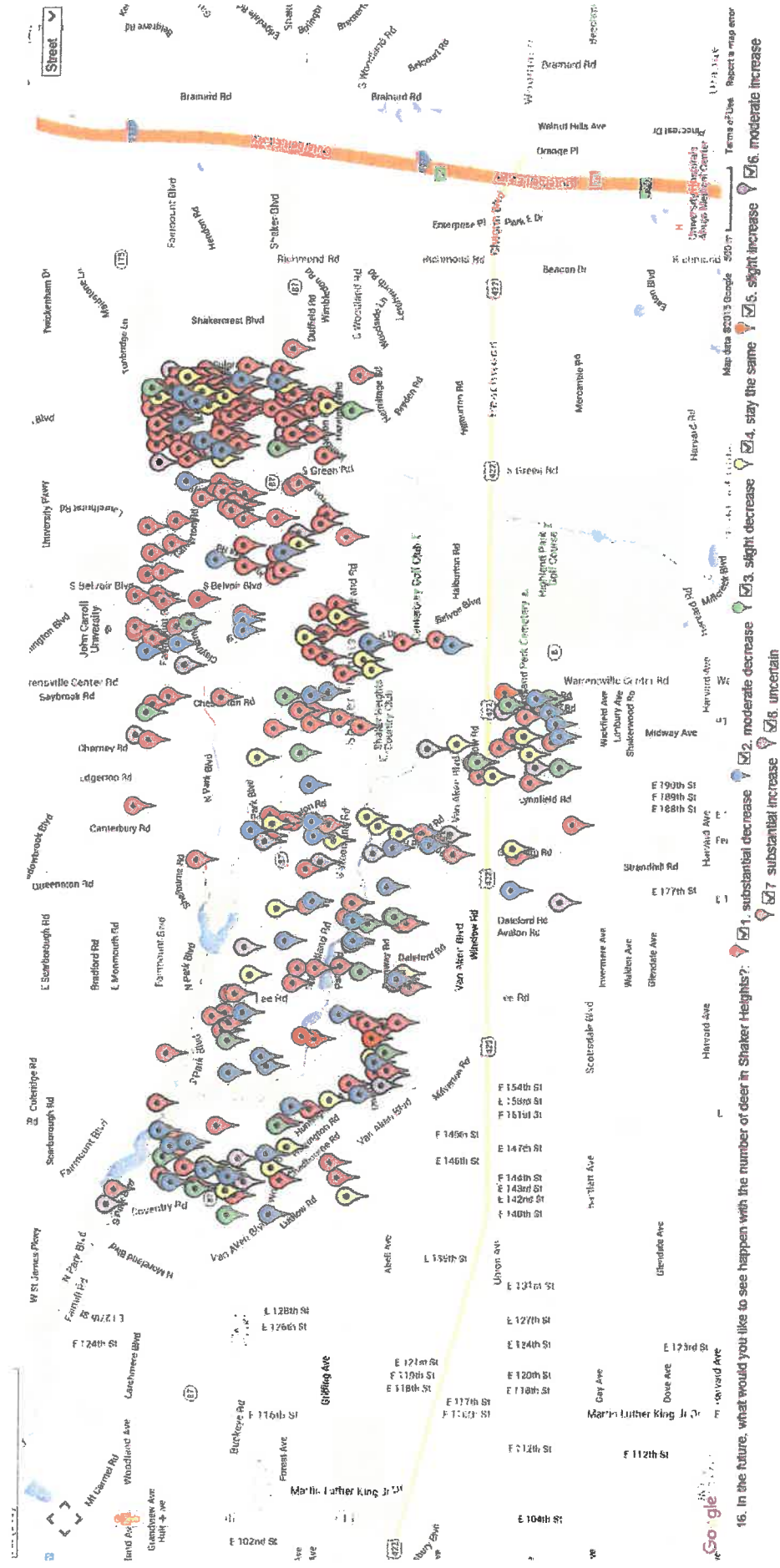


report
 than since PA
 1.15 40
 1.43 21%
 .29 10
 6.02 80%
 14.61 19%
 60.46 32%
 10.60 22.5
 5.44% 20%

* / response each

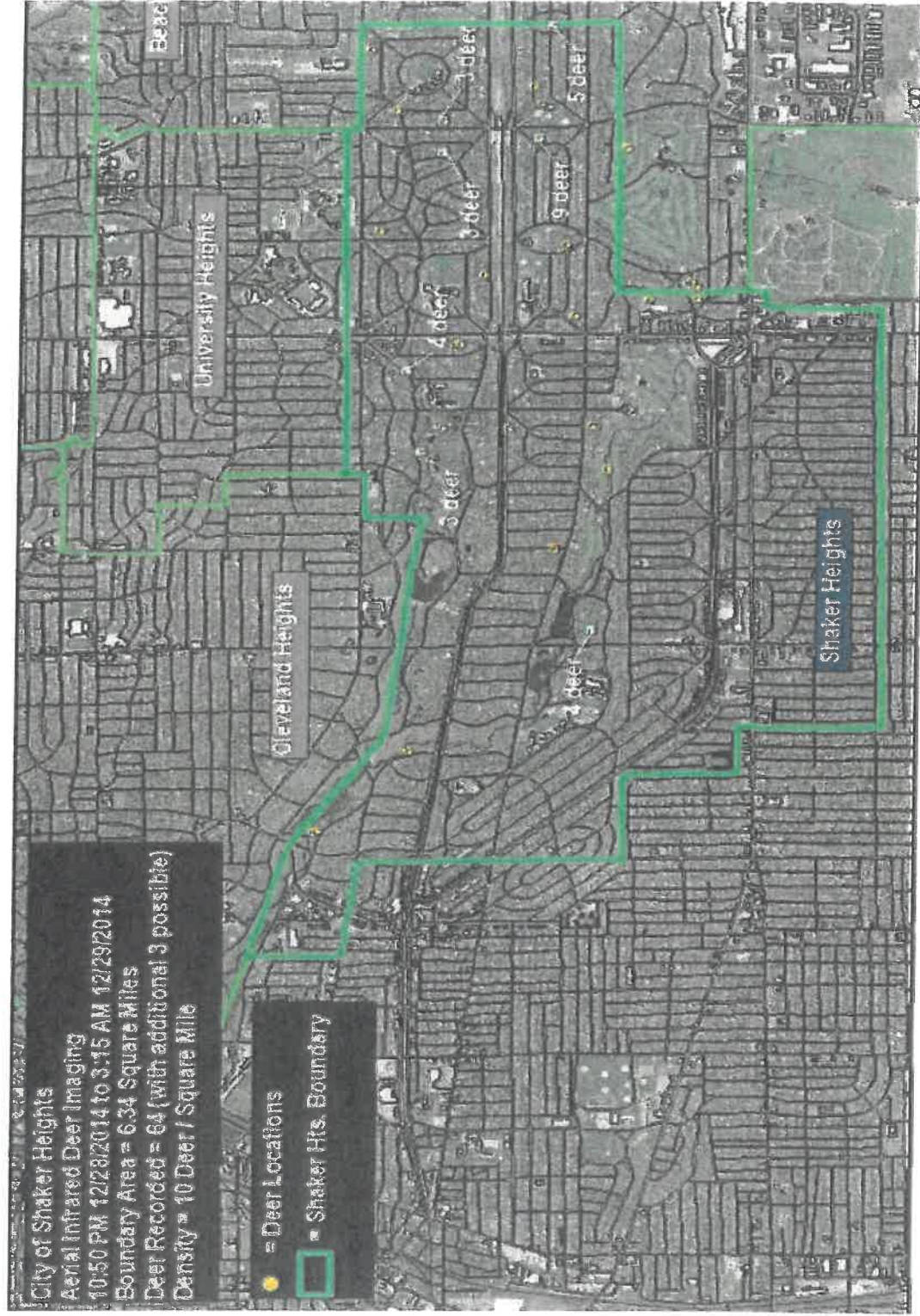
Chart 4 shows that many respondents who want to see a decrease in the number of deer live in the northeast area of the City – east of Warrensville Center Road and north of South Woodland.

Chart 4



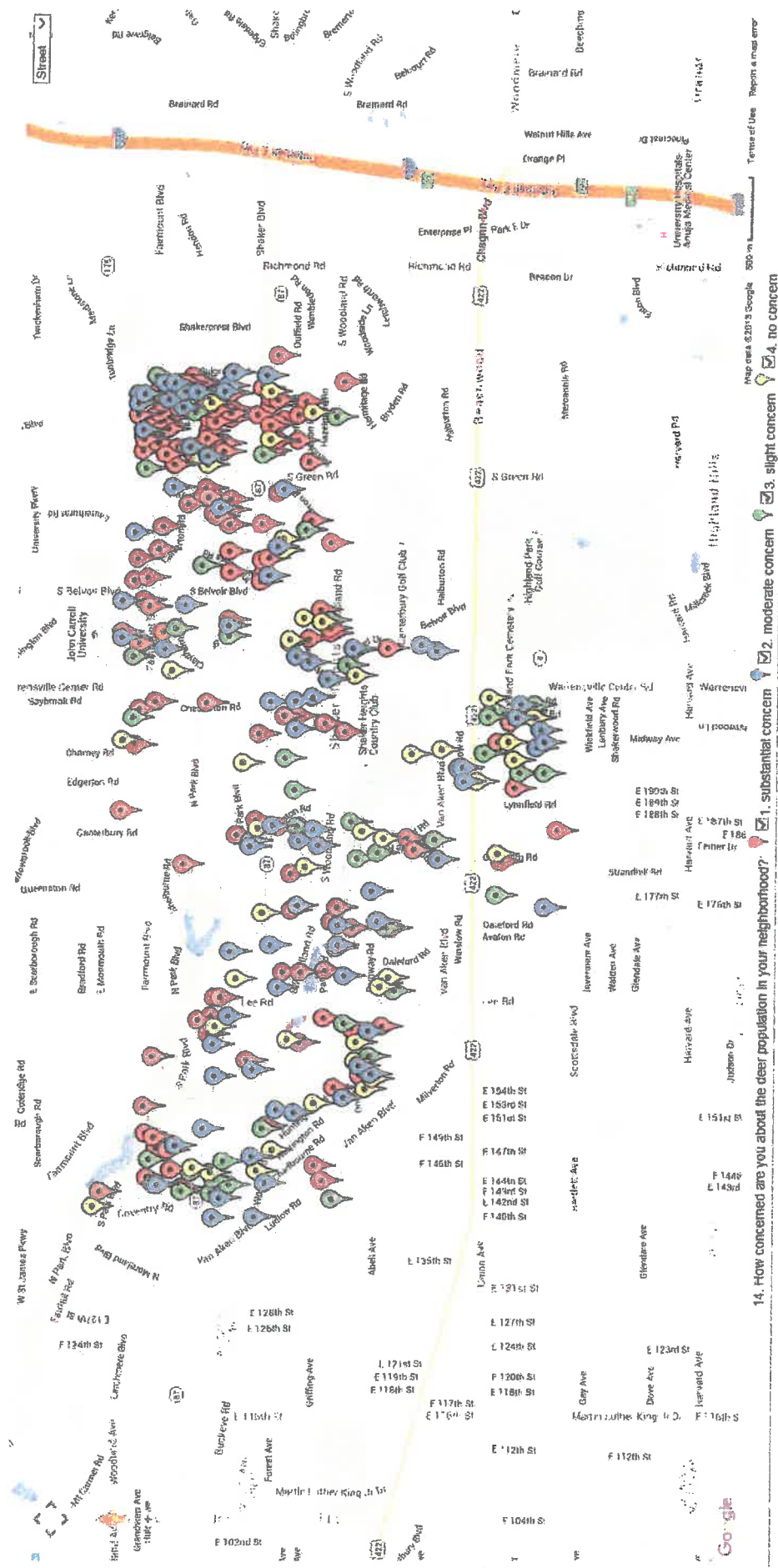
On Chart 5 the aerial infrared deer survey performed by Davis Aviation counted 10 deer per square mile in Shaker Heights, and we can see from the survey's images that most of the deer counted in this survey were in this northeast portion of the City.

Chart 5



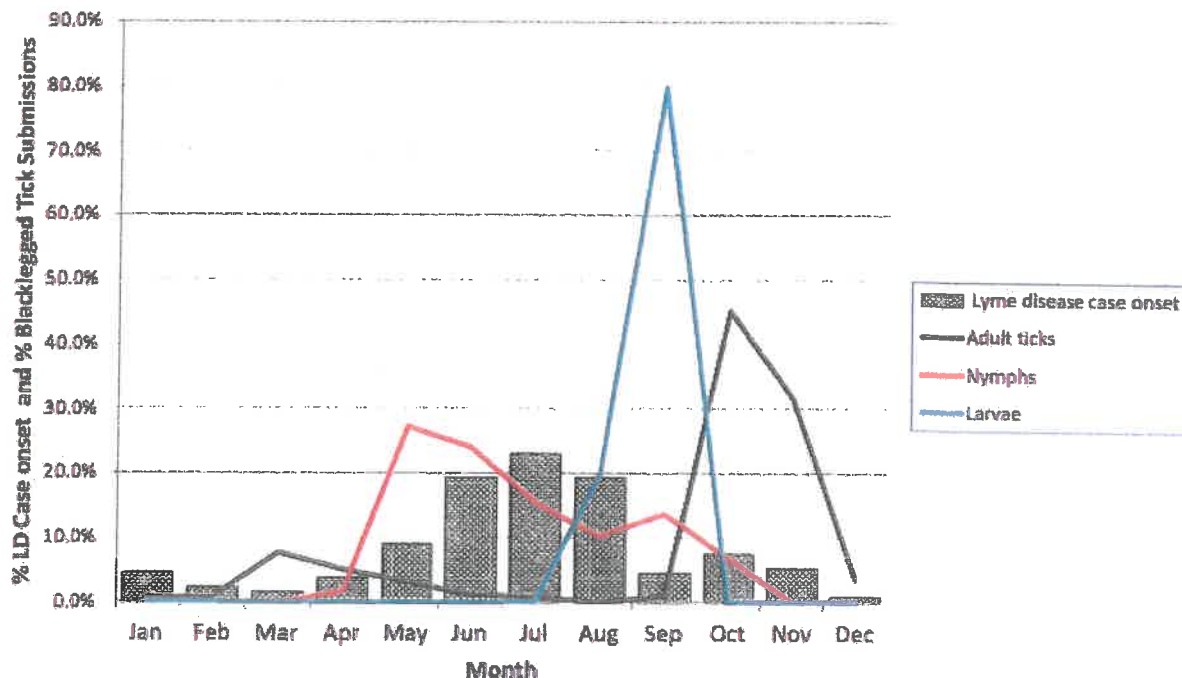
Other areas where deer were reported include along the parklands including Lower Lake, the Shaker Boulevard median particularly east of S. Belvoir Road, and around the Shaker Heights Country Club. Chart 6 below illustrates residents' concerns about deer in those areas.

Chart 6



Issues raised by respondents to the deer survey, particularly by those living in the northeast area of the City, include plant damage; aggression towards pets and humans, especially children; deer pellets in yards making lawns unusable; and deer crowding on streets. Concerns of Lyme disease and ticks have been raised. Shaker Heights Health Department Director Dr. Scott Frank reports that Lyme disease has come to Ohio and is most common between May and August. He reports that it's been several years since there has been a confirmed case of Lyme disease contracted in Cuyahoga County and no confirmed cases in Shaker Heights (though not all Lyme disease is diagnosed). The increasing deer population in Shaker Heights represents little Lyme disease threat to most Shaker residents. While deer are a reproductive host for the black legged tick, rodents (primarily the white-footed mouse) are the primary carriers of Lyme disease. Studies in urban and suburban areas do not demonstrate that decreasing the deer population decreases the occurrence of Lyme disease.

Fortunately, ticks do not thrive in mowed lawns or short grass, so risk of ticks in yards in Shaker Heights is low. Recommendations to create a "tick safe" yard are available here http://www.cdc.gov/lyme/prev/in_the_yard.html. The greatest risk of tick exposure in Shaker would come from small wooded areas, tall grass or weeds, bushes, or leaf debris. If you, your pets, or your children are exposed to these areas, it important to check for ticks carefully. Ticks like moist areas and places where there are creases in the body, such as the groin, underarms, and back of the knees. Because it usually takes a day or two of the tick being attached to transmit Lyme disease, it is important to identify bites as soon as possible. Unfortunately, there is no way to kill black legged ticks in the environment, so they are here to stay. Protecting yourself from the ticks is the best way to avoid any consequences from this new, uninvited, unfriendly neighbor.



<http://www.odh.ohio.gov/lyme>

Although residents chose whether to respond to the survey, the results of the Task Force Deer Survey reflect that residents who reside in the northeast area of the City – east of Warrensville Center Road and north of South Woodland, are concerned about the deer population in their neighborhood, and would like to see a decrease in deer.

IV. Deer Management Options

No single deer management technique or strategy is universally acceptable or appropriate. The complexity of deer issues and limitations of available techniques requires an integrated program. Short-term strategies may relieve immediate problems while long-term approaches will maintain deer populations at acceptable levels.

Non-Lethal Alternatives

- **Habitat Modification** – Deer adapt well to nearly all human-modified environments, except for highly urbanized locations.
- **Unpalatable Landscape Plantings** – Deer are selective feeders; they forage on plants or plant parts with considerable discrimination. Their obvious preference for and apparent avoidance of certain plants can be an advantage. Costly browsing damage may be reduced or eliminated by planting less-preferred species or by establishing susceptible plants only in areas protected from deer. Under most circumstances, landscaping based on knowledge of deer feeding preferences can provide an alternative to the use of expensive chemical repellents and physical barriers. Whether a particular plant species will be eaten by deer depends on the deer's previous experience, nutritional needs, plant palatability, seasonal factors, weather conditions, and the availability of alternative foods. Herd density is an extremely important factor in whether a particular plant species will be eaten. Basically, when enough deer are present, they will eat almost anything.

Deer-browsing resistance of any plant species may change due to fluctuation in deer populations, alternative food availability, and environmental factors. No plant species will be avoided by deer under all conditions.

See Appendix A for a list of unpalatable landscape plantings.

- **Repellents** – Repellents work by reducing the attractiveness and palatability of treated plants to a level lower than other available forage. There are two classifications of repellents, including odor-based and taste-based. Odor-based repellents are generally more advantageous as animals realize plants are treated prior to having to sample and taste a plant which causes damage. Commercial repellents do not perform equally, and research has indicated that odor-based products often out-perform taste-based solutions. The effectiveness of repellents depends on several factors. Rainfall will dissipate some repellents, requiring reapplication. Some repellents do not weather well even in the absence of rainfall. Deer are also likely to ignore either taste or odor repellents in times of food scarcity.

Samples of repellents can be found in Appendix B

Non-Traditional Techniques

- **Reproductive Agents** – Reproductive agents for wildlife are not commercially available. They are currently classified as experimental and are produced by research facilities. Research trials are ongoing, but this option is not viable. Also, the free-ranging nature of deer makes it difficult to deliver contraceptives to them. **The Ohio Department of Natural Resources (ODNR), Division of Wildlife, will not authorize this technique.**
- **Relocation** – This technique requires the use of traps and /or remote chemical immobilization techniques. This method has been demonstrated to be impractical, stressful to the deer, and may result in a high post-release mortality rate of up to 85%. These programs also require release sites that are capable of receiving deer. **The Ohio Department of Natural Resources, Division of Wildlife, will not authorize this technique.**

Lethal Alternatives

The Ohio Department of Natural Resources, Division of Wildlife, will process deer damage control permits to applicants experiencing a high rate of deer/vehicle accidents resulting in significant safety issues, but deer/vehicle accidents have been minimal in Shaker Heights, mainly due to our low speed limits. Permits may also be granted to reduce numbers based on property damage to landscapes, ornamental shrubbery, gardens, trees, and wooded areas.

- **Trap and Euthanasia** – Capture with box traps, Clover traps, drop nets, or rocket nets followed by euthanasia. Deer are greatly stressed during the restraint phase of any capturing process. A deer caught in such a trap remains in the trap until animal control personnel arrive to euthanize the deer.
- **Sharpshooting** – This method employs trained, experienced personnel to lethally remove deer through sharpshooting. Human safety concerns are often associated with the discharge of firearms in suburban landscapes. Using baits to attract deer to designated areas prior to removal is quite common. Archery equipment has been used to remove deer in suburban areas when firearms discharge is not permitted.

In an urban setting like Shaker Heights, sharpshooting with firearms or archery equipment must use techniques that maximize safety, humaneness, discretion, and efficiency. The use of trained personnel to remove deer has been successful in other neighboring cities, including Pepper Pike, Mentor, Solon, and in the Cleveland Metroparks. Costs of this solution vary depending on the use of outside contractors (U.S. Department of Agriculture), individual hunters, or officers of the Shaker Heights Police Department.

V. Conclusions and Recommendations

Deer-related concerns have increased significantly in Shaker Heights. The negative impact of deer is growing; residents cannot enjoy their gardens and yards; they are fearful of aggressive deer; and they are concerned for the safety of their children and pets. Non-lethal methods, such as deer repellents and unpalatable gardens, have little to no impact on reducing deer damage. While the aerial infrared deer survey counted 10 deer per square mile, the density of deer in certain areas of the City is greater.

As the extent of these concerns grow, this Task Force has the following recommendations for addressing residents' safety, health, and economic concerns caused by white-tailed deer.

- **Public information and education:** The City should publicize the information available on its website, shakeronline.com, to include links to information available in this report, including the list of Unpalatable Landscape Plantings and Samples of Deer Repellents. The City should also facilitate the wide distribution of this report to its residents via the Mayor's E-News, Facebook, other social media postings, and other methods offered by the City's Communications & Marketing Department.
- **Continued data collection:** Continue to make the Deer Survey and Deer Reporting Form available on the website to collect up-to-date data on the impact and location of deer in the City. The City should also monitor the outcomes of other cities' deer management programs, and continue to work with the Eastside Wildlife Management Partnership to identify possible collaborations on deer management with neighboring cities.
- **Deer reduction strategy (culling):** Based on the data collected which identifies the number and location of deer, the City should work with the Ohio Department of Natural Resources, Division of Wildlife, to develop and implement a sharpshooting program on certain public lands. The details of such a program, including cost, locations, methods, and desired outcomes, should be presented to City Council for their approval for implementation beginning winter 2017.

Appendix A

List of Unpalatable Landscape Plantings

Plants Rarely Damaged

Barberry
Common Boxwood
Drooping Leucothoe

Common Barberry
Russian Olive
Colorado Blue Spruce

Paper Birch
American Holly

Plants Seldom Damaged

European White Birch
Flowering Dogwood
Redvein Enkianthus
Honey Locust
Chinese Junipers – green
Beautybush
Austrian Pine
Red Pine
Corkscrew Willow
Japanese Wisteria

American Bittersweet
Kousa Dogwood
European Beech
Chinese Holly Chinese
Junipers – blue Norway
Spruce
Pitch Pine
Scots Pine
Common Sassafras

Red Osier Dogwood
English Hawthorn
Forsythia
Inkberry
Mountain Laurel
White Spruce
Mugo Pine
Japanese Flowering Cherry
Common Lilac

Plants Moderately Damaged

White Fir
Silver Maple
Trumpet Creeper
Panicked Dogwood
Cranberry Cotoneaster
Japanese Cedar
Rose of Sharon
Panicle Hydrangea
Easter Red Cedar
Privet
Virginia Creeper
Bush Cinquefoil
Firthorn
White Oak
Deciduous Azaleas
Staghorn Sumac
Willows
Persian Lilac
Basswood
Carolina Hemlock
Doublefile Viburnum

Paperback Maple
Sugar Maple
Downy / Allegheny Serviceberry
Smokebush
Old-fashioned Weigela
Border Forsythia
Smooth Hydrangea
Japanese Holly
European Larch
Saucer Magnolia
Sweet Mock Orange
Sweet Cherry
Bradford Callery Pear
Chestnut Oak
Carolina Rhododendron
Multiflora Rose
Anthony Waterer Spiraea
Japanese Tree Lilac
Greenspire Littleleaf Linden
Judd Viburnum
Korean Spice Viburnum

Red Maple
Common Horse Chestnut
Japanese Flowering Quince
Cotoneaster
Rockspray Cotoneaster
Common Witchhazel
Climbing Hydrangea
China Girl / Boy Holly
Goldflame Honeysuckle
Dawn Redwood
Eastern White Pine
Douglas Fir
Common Pear
Northern Red Oak
Rosebay Rhododendron
Rugosa Rose
Bridalwreath Spiraea
Late Lilac
Eastern Hemlock
Leatherleaf Viburnum

Plants Frequently Damaged

Balsam Fir
Eastern Redbud
Cornelian Dogwood
English Ivy
Plums
Catawba Rhododendron
European Mountain Ash
Western Yew
American Arborvitae

Fraser Fir
Atlantic White Cedar
Winged Euonymus
Apples
Rhododendrons
Pinxterbloom Azalea
Yews
Japanese Yew

Norway Maple
Clematis
Wintercreeper
Cherries
Evergreen Azaleas
Hybrid Tea Rose
English Yew
English/Japanese Hybrid Yew

Appendix B

List of Repellents

Deer-Away® - This contact repellent is both an odor- and taste-based repellent. Studies have shown it to be 85% to 100% effective.

Hinder® - This area repellent is one of the few registered for use on edible crops. It is applied directly to vegetable and field crops as well as ornamentals and fruit trees. Its effectiveness is usually limited to two or four weeks.

Thiram – This repellent is a fungicide that acts as a contact deer repellent. It is most often used on dormant trees and shrubs. Thiram products are most effective when used with Vapor Gard®, which increases adhesion.

Miller® Hot Sauce – This contact repellent is suggested for use on ornamentals, Christmas trees, and fruit trees. Care must be taken when applied to fruit trees or vegetables.

Tankage – This repellent is a slaughterhouse by-product traditionally used as a safe repellent in orchards. It repels deer and anything else by smell. Various forms of animal urine (fox, mountain lion, wolf, or any other predator type) are also effective and safe.

Ro-pel® - This taste-based repellent repels deer with an extremely bitter taste. Ro-pel® requires only a once a year application. It is not recommended for use on edible crops.

Hair Bags – Human hair is an odor repellent that costs very little but has not consistently repelled deer. Human hair is collected, placed in mesh bags and hung from shrubs and tree branches.

Bar Soap – Recent studies and numerous testimonials have shown that ordinary bars of soap applied in the same manner as hair bags can also be effective. One bar can protect a radius of about one yard.

When using any form of repellent, follow all directions indicated on the label. No toxicant is registered for deer control. Poisoning of deer with any product for any reason is illegal. The effectiveness of any product is related to the availability of food sources. Repellents work when applied repeatedly and when varied as deer can become immune to a particular scent. These repellents can be purchased in most home and garden stores or through farming/hunting supply catalogs.



SHAKER HEIGHTS

Report of the Deer Task Force to City Council February 8, 2016

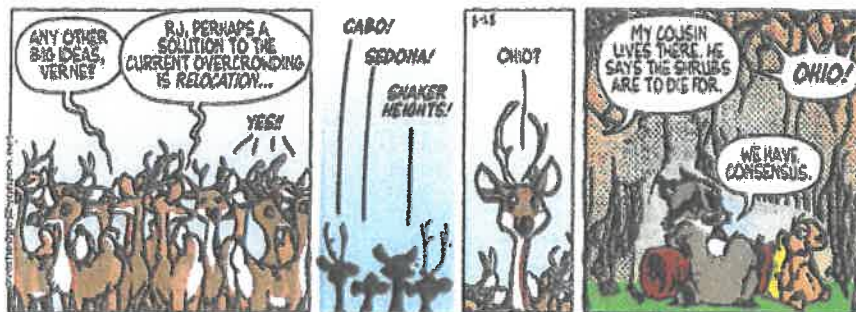
James Brady, resident (former Council member)
Neil Dick, resident
Kyle Dreyfuss-Wells, resident
Kevin M. White, resident
Anne E. Williams, member of Council

Staff

Jeri E. Chaikin, Chief Administrative Officer
D. Scott Lee, Chief of Police
Jeffrey DeMuth, Commander, Shaker Heights Police Department
Patricia Speese, Public Works Director

Over the Hedge by Michael Fry & T Lewis

Fri, Aug 28



Presentation

- Background on Deer and Deer Behavior
- Deer Problem in Shaker Heights
- Deer Management Options
- Task Force Conclusions and Recommendations
- Shaker Heights Police Department Deer Management Program

Background on Deer in our Region/ Deer Behavior

- Few predators
- High reproductive rates = ↑ population
- No hunting
- Highly adaptable



High Quality, Easily Accessible Foods



- Detrimental Impacts to:

- Native plants
- Wildlife
- Habitat quality
- Ecosystems processes



Damage to Landscape and Garden Vegetation



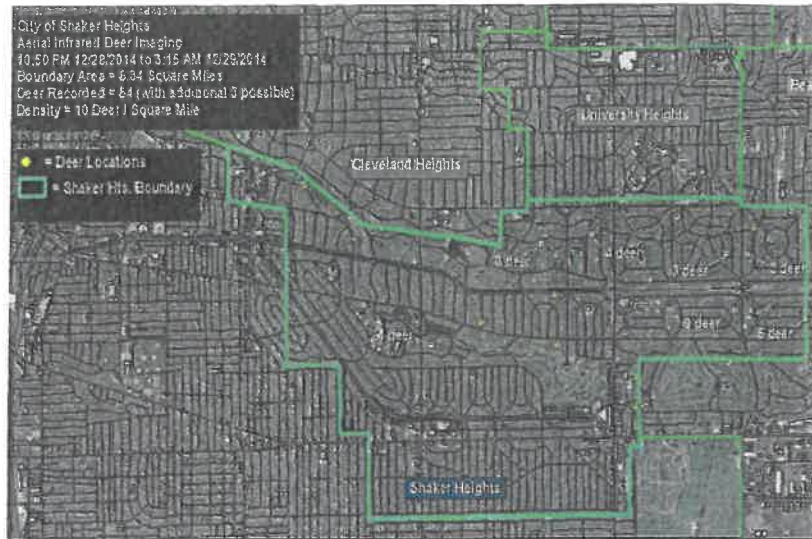
Deer Problem in Shaker Heights

Resident Calls Concerning Deer Since 2010

Public Works	2010	2011	2012	2013	2014	2015 (thru Sept.)
Dead Deer	12	18	20	25	26	24
Deer in Yard	16	19	33	35	29	36
Subtotal	28	35	53	60	54	60

Police	2010	2011	2012	2013	2014	2015 (thru Sept.)
Deer/Vehicle Accidents	5	3	6	2	6	4
Injured Deer Dispatched	3	1	4	0	4	5
Deer Observed	25	19	26	31	43	32
Subtotal	33	23	36	33	53	41
TOTALS	61	58	89	93	107	101

Aerial Infrared Deer Survey



Resident Survey

- 363 Responses as of 1/29/16
- Concerns raised:
 - Plant damage



Resident Survey

- Aggression towards pets and humans, especially children



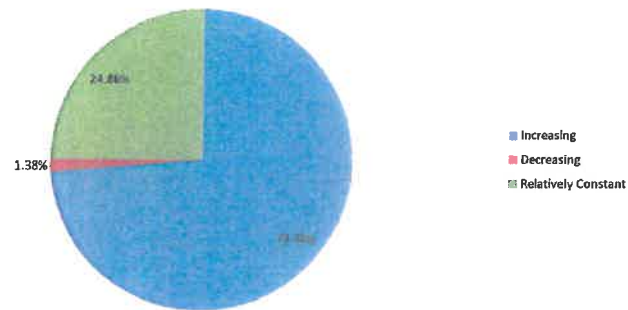
Resident Survey

- Deer pellets in yards

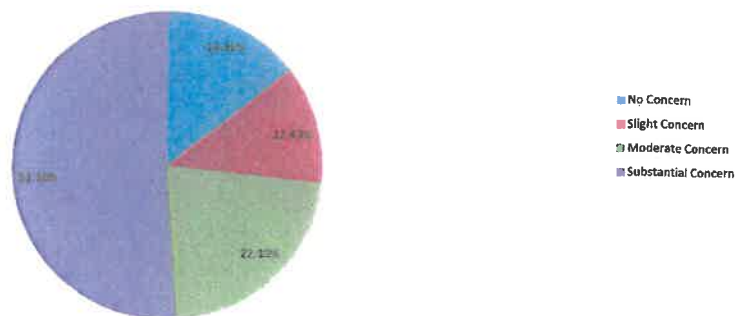


- Deer crowding on streets
- Lyme disease and ticks

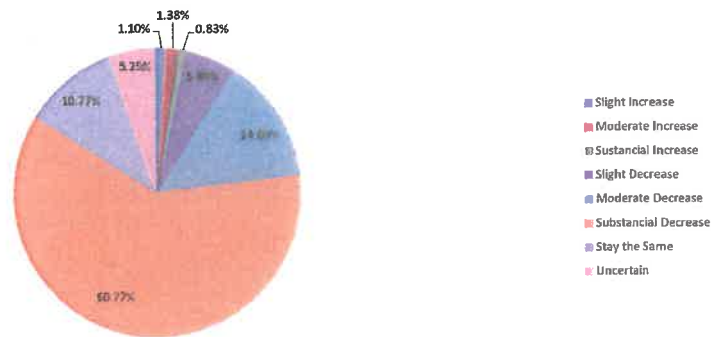
How would you describe the number of deer in your neighborhood?



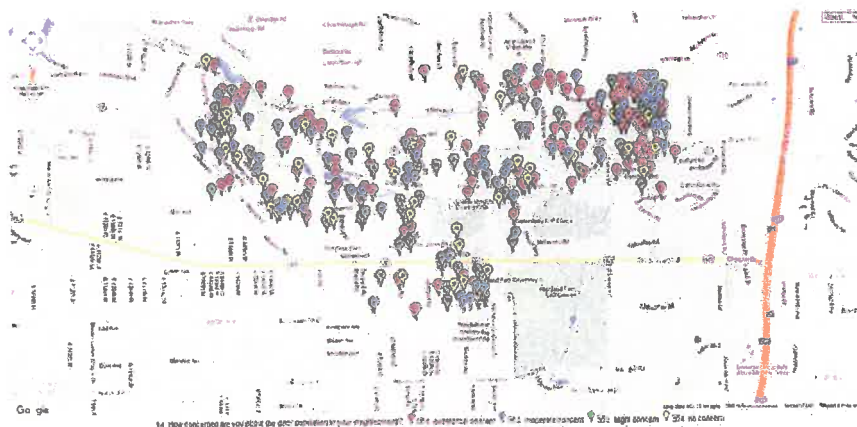
How concerned are you about the deer population in your neighborhood?



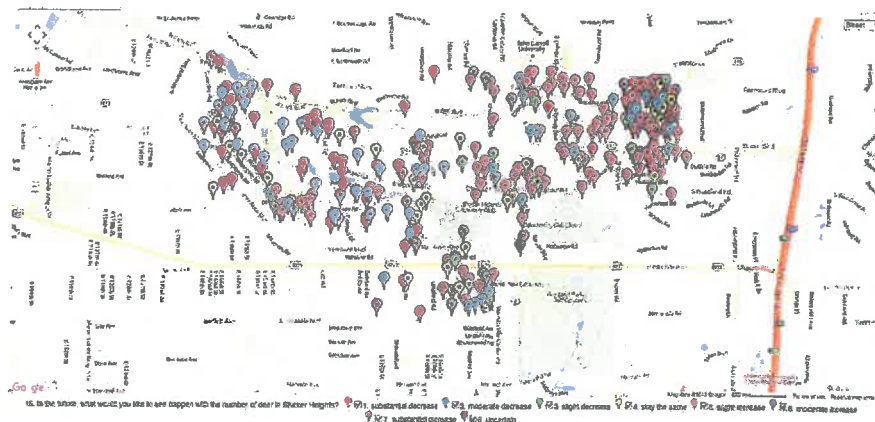
In the future, what would you like to see happen with the number of deer in Shaker Heights?



How concerned are you about the deer population in your neighborhood?



In the future what would you like to see happen with the number of deer in Shaker Heights?



Deer Management Options

- **Non Lethal Alternatives**
 - Habitat modification
 - Unpalatable landscape plantings
 - Repellents

Residents report these techniques have little success

Deer Management Options

- **Non Traditional Techniques**

- Reproductive agents
- Relocation

ODNR/Division of Wildlife will not authorize these techniques!

Deer Management Options

- **Lethal Alternatives**

- Trap and euthanasia
- Sharpshooting – firearms or archery
 - Pepper Pike, Solon, Bay Village, and Avon Lake

Task Force Conclusions re: Deer in Shaker

- Resident complaints increasing
- Non-lethal methods have little to no impact on reducing deer damage
- Concern for children and pets
- Limitation on use of residential yards
- Costs to residents to limit deer damage
- Average 10 deer per square mile for entire City vs. density of deer in certain neighborhoods
- Only viable way to control the destructive impact of deer on the environment is to implement a limited culling program

Cleveland Metroparks Culling Results

**Metroparks North Chagrin Reservation
2003 Before Targeted Deer Culling**



**Metroparks North Chagrin Reservation
2007 Following Targeted Deer Culling**



City of Solon Culling Results

Year	Deer Count	Ratio (deer/square mile)	Deer Vehicle Accidents	Deer Removed
2004	922	45	165	
2005	762	37	119	602
2006	496	24	85	400
2007	450	22	90	150
2008	560	27	72	175
2009	450	22	45	250
2010	694	34	64	0
2011	724	35	105	0

Task Force Recommendations

- Public information and education
- Continued data collection
- Work with the Ohio Department of Natural Resources – Division of Wildlife to plan a limited culling program on public land in winter 2017

Shaker Heights Police Department Deer Management Program

Goals:

- To harvest deer in accordance with the Department of Natural Resources laws and deer management program as safely and humanely as possible on City-owned land.
- To manage the deer herd; not eradicate it.

Shaker Heights Police Department Deer Management Program

Harvest program summary:

- Utilizing the Cleveland Metroparks model, with Shaker Heights Police precision marksmen.
- Projected dates: December 2016 – January 2017.
- Coordinating with the Department of Natural Resources to obtain permits for nuisance abatement on City-owned land.
- Initial startup investment: \$70,000 with a proposed operating budget annually of \$48,000.

Program Details

Ohio Department of Natural Resources requirements:

- Formal written Deer Management Plan, identifying specific problems and goals
- Application for deer damage permits
- Annual summary of results and assessment of deer herd



Program Details

Baiting:

- Baiting will take place 3 weeks prior to the start of the program and continue daily
- Apples and corn will be strategically placed
- Trail cameras will be utilized at bait sites to confirm deer movement and predict most efficient times to harvest



Program Details



Precision Marksmen:

- Two SHPD state qualified precision marksmen officers with expert skill sets will harvest deer from elevated platforms
- Training
- Specialized scoped rifles with silencers and lighting systems
- Tree stands
- Harvesting will take place between 4:00 p.m. and midnight
- Mobile harvesting, if appropriate, will take place between 9 p.m. and midnight based on deer patterns

2012

Program Details

Harvesting and Processing:

- A&S Animal Control will remove and transport deer
- Deer will be transported to a refrigeration truck and taken to Canal Fulton Provisions
- Canal Fulton Provisions will field dress and prepare the deer, and deliver the venison to Harvest for Hunger
- Precision marksmen will document harvest information for the ODNR

**HARVEST
for HUNGER**

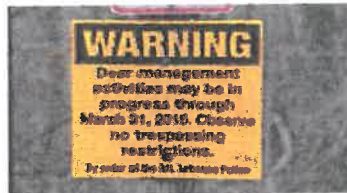


Food Bank

Program Details

Security:

- SHPD police officers will ensure that citizens are not in the operational area
- Precision marksmen will be in communications with Police Officers in the area, as well as the Communications Center
- Signs will be posted outside the operational area



Program Details

Startup costs:

Bait	\$ 992
Deer processing	\$ 5,780
Tree stands	\$ 1,467
Supplies	\$ 4,657
Special weapons	\$ 18,528
Overtime and range time	\$ 16,844
Baiting and removal	\$ 14,580
SHPD security	<u>\$ 6,720</u>
Total	\$ 69,568

Ongoing annual operating budget **\$48,000** (approx.)

Next Steps

- 1st reading of appropriation of \$29,000 in 2016 operating budget
- Public comment on proposed deer management plan



SHAKER HEIGHTS

*compare to
last year! ?*

City of Shaker Heights End of Season Deer Management Culling Report

February 6, 2018

Table of Contents:

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Site Description	4
Scope and Need for Action	5
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Deer Management Goals	12
Deer Harvested: informational charts and graphs	13 - 18
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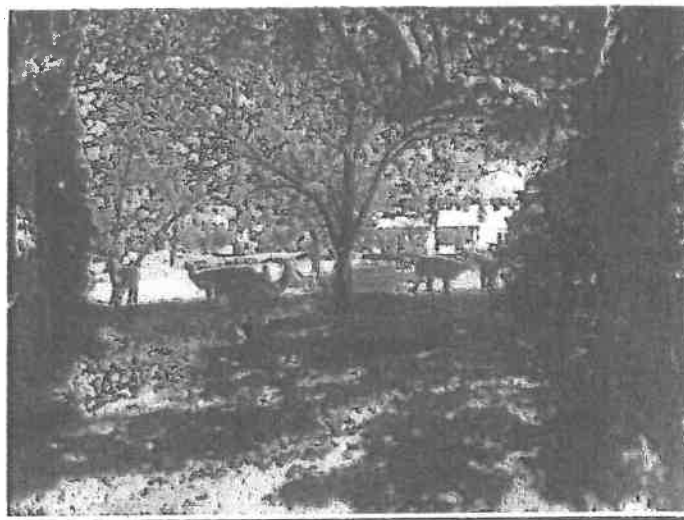
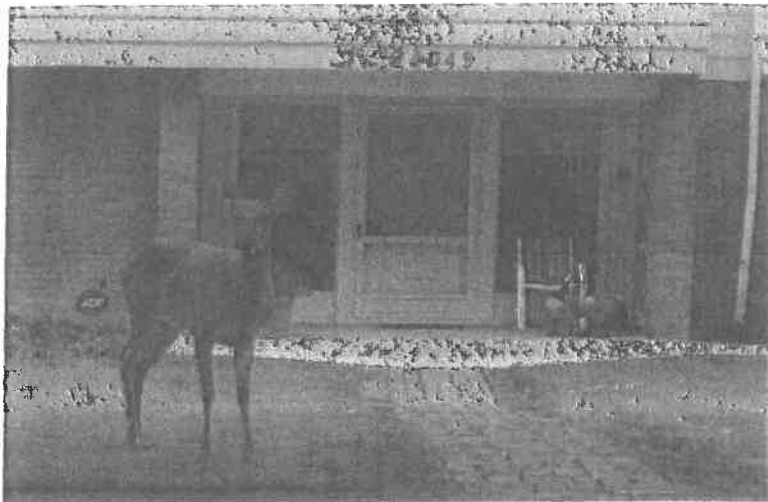
Executive Summary

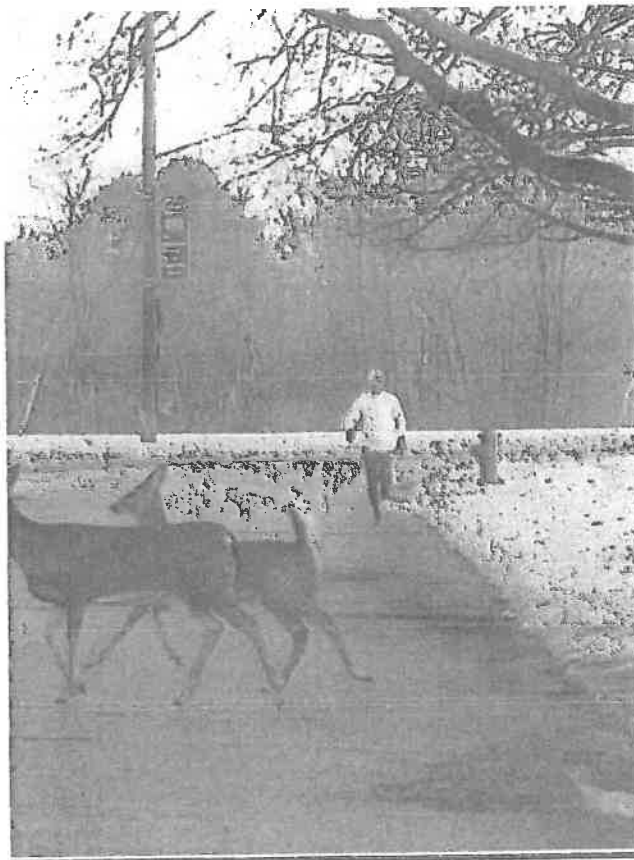
The Deer Task Force Committee elected to again utilize highly trained Shaker Heights Police precision marksmen to harvest deer. A detailed deer management plan was submitted to the Ohio Department of Natural Resources (ODNR) Division of Wildlife. The ODNR reviewed the plan and authorized the City of Shaker Heights Police precision marksmen to harvest 40 deer under Deer Damage Control Permit #3363.

The Shaker Heights precision marksmen started harvesting deer on January 3, 2018, and finished on February 5, 2018. A final permitted total of 40 deer were harvested from the City. As a result of the culling efforts, over 1,062 pounds of venison was donated to the needy families in the Cleveland area with a market value of over \$10,000.00. The venison helped provide approximately 4,300 meals to the needy.

The precision marksmen demonstrated the ability to safely and humanely harvest 40 deer in an urban environment. Despite the challenges presented, they were able to accomplish this task with minimum contact with the public and within a reasonable time frame. They were able to obtain results and remain within budget.

This report briefly summarizes the culling effort, the challenges faced, the characteristics of deer harvested during the winter of 2018, and future recommendations.





Methods

Baiting was initiated at four sites on City-owned property. Authorization was received to start a pilot program of baiting and culling on private property. A private property location was selected and a camera was placed on the property and baiting was started. Unfortunately we could not move forward as we were unable to reach a mutual agreement with the resident. > 2

We will continue to explore private property baiting and culling in the future; many residents indicated on the survey that they were willing to participate in the program.

Bait locations were initially established in the following areas:

- Private Property
- Southerly Park
- Wooded Parcel near Lee / South Park
- Wooded Area near Shaker / Sulgrave near the Beachwood Border.

{ Monday through
Thursday

Within the first two weeks of baiting, we eliminated the Southerly Park site due to heavy pedestrian and dog traffic and minimal deer visiting the site. We eliminated the private property site and attempted to bait a new site in a wooded parcel near Shelburne and North Park after seeing a herd of seven deer in the area. The Shelburne / North Park site was visited by only two deer and we eliminated the site. We attempted to bait at the western end of the Shaker / Green RTA lot. We eliminated the site due to heavy pedestrian and dog traffic.

We were forced to utilize two baiting sites.

The precision marksmen again demonstrated the ability to safely and humanely harvest 40 deer in an urban environment. Despite the challenges that they were faced with the marksmen were able to accomplish this task with minimum contact with the public and within a reasonable time frame.

The precision marksmen were operating in tight quarters. Deer were engaged in and around the bait sites from distances ranging from 7 yards to 83 yards. The precision marksmen reported that they passed on over 75 engagement opportunities due to branches obstructing the target, people being too close or the target not being in front of a proper backstop.

Prior to arriving at the sites, the precision marksmen contacted the officer in charge of the shift and notified officers on the location they were conducting operations. Signs were posted that read as follows: WARNING, Deer Management Area, DO NOT ENTER Shaker Heights Police 216-491-1234. The Signs were bright yellow and affixed to a doll rod placed in an orange traffic safety cone.



Nuisance Animal Control was in the area and assisted in attempting to keep pedestrian traffic out of the operational area. Several hikers, walkers and cross country skiers were rerouted. We found all of the pedestrians encountered to be supportive of the deer culling efforts.

January 2018 presented many challenges with the temperatures ranging from subzero to unseasonably warm conditions. Weather changes affect deer patterns. Additionally, pedestrians and dogs were present daily in the area. One jogger who had ear buds in and was running by staring at the ground ran past three warning signs and almost ran into the truck that the marksmen were in. The runner unintentionally scared off two deer. He apologized and continued with his run.

The deer were well educated from last year and were significantly more wary. One pedestrian covered up the bait site with sticks and logs to prevent the deer from accessing the site. (This was observed on a trail camera.) The precision marksmen found it difficult to pattern deer. Instead, deer visited the bait areas sporadically and rarely were found to be in herds near the bait areas. The precision marksmen saw a significant number of deer on a regular basis in residents' yards. They were unable to engage the deer as it was not safe. The precision marksmen adapted and

utilized real time information to relocate and intercept the deer. This caused them to engage deer from a variety of shooting positions and vantage points. The precision marksmen predominantly engaged deer from the roof of a truck. From this elevated position they were able to safely and humanely harvest deer. On occasion, they located high ground positions and engaged deer from the ground utilizing the topography to ensure a safe background.

The precision marksmen operate as a team assessing risks, ranging targets, ensuring there is a proper backstop, the target is clear of obstructions, spotlighting targets at night and engaging the target at the proper time. They were also careful to do their best not to engage targets while cars were driving by.

The precision marksmen experienced a situation where a deer moved at the exact time the deer was engaged. The deer was hit however the deer was able to escape. The precision marksmen had trained for this type of scenario and tracked the deer. Unfortunately, the precision marksmen were unable to engage the deer as it was not safe. The next day the deer was located in the rear yard on South Woodland and the deer was harvested.

There was a deer?

Deer Management Goals

The Department of Natural Resources authorized the Shaker Heights Police precision marksmen to harvest 40 deer under Deer Damage Control Permit #3363.

	Date	Time	Location	Temp	Conditions	Shot	Sex	Antler	Fetus	Weight	Age
1	1/3/2018	1746	Lee / S. Park	18	Light Snow	1	F		2	135	4
2	1/5/2018	1535	Shaker / Sulgrave	7	Cloudy	1	M	N		75	1
3	1/5/2018	1610	Shaker / Sulgrave	7	Cloudy	1	F		2	123	5
4	1/5/2018	1615	Shaker / Sulgrave	7	Cloudy	1	F		2	138	6
5	1/6/2018	1052	15707 S. Woodland	10	Clear	2	M	Y		135	2
6	1/8/2018	1728	Lee / S. Park	34	Overcast	1	M	N		95	1
7	1/9/2018	1745	Lee / S. Park	27	Ice / Fog	1	F		2	127	3
8	1/10/2018	1730	Lee / S. Park	48	Rain	1	F		1	143	3
9	1/15/2018	1558	Shaker / Sulgrave	25	Snow	1	F		2	134	3
10	1/15/2018	1608	Shaker / Sulgrave	25	Snow	1	F		0	62	1
11	1/15/2018	1610	Shaker / Sulgrave	25	Snow	1	F		2	145	3
12	1/15/2018	1700	Shaker / Sulgrave	25	Snow	1	F		0	53	1
13	1/16/2018	1315	Lee / S. Park	15	Overcast	1	M	N		156	3
14	1/16/2018	1730	Shaker / Sulgrave	15	Overcast	1	F		2	134	3
15	1/16/2018	1730	Shaker / Sulgrave	15	Overcast	1	F		0	62	1
16	1/16/2018	1730	Shaker / Sulgrave	15	Overcast	1	F		2	145	3
17	1/16/2018	1745	Shaker / Sulgrave	15	Overcast	1	F		0	53	1
18	1/18/2018	1600	Shaker / Sulgrave	28	Clear	1	F		2	156	3
19	1/18/2018	1635	Shaker / Sulgrave	28	Clear	1	F		0	68	1
20	1/23/2018	1645	Shaker / Green	29	Rain / Sleet	1	M	Y		142	1
21	1/23/2018	1650	Shaker / Belvoir WB	29	Rain / Sleet	1	F		2	143	3
22	1/23/2018	1653	Shaker / Belvoir WB	29	Rain / Sleet	1	F		2	151	4
23	1/23/2018	1745	Shaker / Green	29	Rain / Sleet	1	M	Y		158	3
24	1/23/2018	1815	Shaker / Belvoir WB	29	Rain / Sleet	1	M	Y		178	3
25	1/24/2018	1625	Shaker / Green	25	Snow	1	F		2	148	4
26	1/24/2018	1630	Shaker / Green	25	Snow	1	M	N		67	1
27	1/24/2018	1654	Shaker / Sulgrave	25	Snow	1	M	Y		151	1
28	1/25/2018	1230	Shaker / Green	35	Overcast	1	F		2	143	4
29	1/31/2018	1230	Shaker / Green	35	Overcast	1	F		2	133	3
30	1/31/2018	1230	Shaker / Green	35	Overcast	1	F		2	136	3
31	1/31/2018	1231	Shaker / Green	35	Overcast	1	F		1	145	4
32	1/31/2018	1231	Shaker / Green	35	Overcast	1	M	N		54	1
33	1/31/2018	1840	Lee / S. Park	36	Overcast	1	F		1	121	2
34	1/31/2018	1845	Lee / S. Park	36	Overcast	1	F		0	128	2
35	2/1/2018	520	Shaker / Green	38	Overcast	1	M	Y		169	2
36	2/1/2018	815	Shaker / Belvoir WB	37	Overcast	1	F		2	132	2
37	2/1/2018	815	Shaker / Belvoir WB	37	Overcast	1	M	N		60	1
38	2/1/2018	816	Shaker / Belvoir WB	37	Overcast	1	M	N		58	1
39	2/5/2018	1315	Shaker / Green	19	Sunny	1	F		2	171	6
40	2/5/2018	1320	Shaker / Green	19	Sunny	1	F		1	72	1
				26.075					38	119.975	3

Residents are concerned about deer vehicle collisions as well as the increase boldness of the deer. Multiple residents have expressed concerns that the deer are not afraid of humans. They have also expressed concern about the damage to plants and shrubs as well as concerns about Lyme disease and deer ticks.

The Deer Management Program in Shaker Heights has made some progress in reducing the number of deer related accidents as well as reducing the number of calls for service involving deer; however, we have not reached our goals for the Program.

Scope and Need for Action

Last year 40 deer were harvested by Shaker Heights Police precision marksmen. The Deer Task Force Committee again elected to utilize the Shaker Heights Police precision marksmen to cull deer within the City.

1. 69% of the Shaker Heights residents that responded to the deer management survey felt that the deer population should be decreased in the future. Our goal is to reduce this number by 50% as measured by annual surveys, with a target of 35% or less of the residents responding that the herd should be further decreased. Last year's survey indicated that 67% of the residents surveyed felt the deer population should be decreased. Our next annual survey is scheduled for August, 2018 and will be used as input into our deer management plan for next year.
2. The goal of the deer management program is to maintain a sustained reduction in vehicle / deer accidents by 50% as measured by the number of deer / vehicle accidents and dead deer recovered by the Service Department annually. We continue to move toward reaching our goals. We have had measurable success in reducing the number of complaints to the police department and service department. We have reduced the number of deer that have been found dead due to traumatic injury by 17%. (These deer were most likely involved in unreported vehicle collisions.) Recently, in November of 2017 Animal Control reported finding eight to ten dead deer (the most likely cause of death was EHD). The majority of our citizens continue to be concerned about the deer, as 67% would like to see the deer population substantially decrease. We have made progress toward our goal, however, have not met the goal.
3. The goal of the deer management program is to be able to observe a noticeable increase in the vegetation as determined by the Nature Centers controlled plant survey. The Nature Centers controlled plant survey results will be evaluated annually. Unfortunately, the plant survey was not able to be conducted this year and we did not receive any results. I have spoken to Mr. Thomas Hornburger of the Nature Center. Mr. Hornburger has advised that a plant survey will be conducted in the upcoming year and he will forward the results.
4. The precision marksmen and officers have reported seeing an increase in deer numbers. Deer have been observed in the backyards of residents as well as in the streets.

Site Description

The City of Shaker Heights is located in northeastern Ohio within Cuyahoga County at 41° 28'35"N, 81° 33'6"W. According to the United States Census Bureau, the City has a total area of 6.32 square miles, of which 6.28 square miles is land and 0.04 square miles is water.

Shaker Heights is an inner-ring suburb of Cleveland, Ohio, and comprises over six square miles; most of it (4.7 square miles) is residential. More than 7% of the land use is open space and parklands, including the Shaker Heights Country Club, the Van Aken Boulevard and Shaker Boulevard medians, on which the Greater Cleveland Regional Transit Authority (GCRTA) rapid transit operates, and the Shaker parklands, which include Lower Lake, Horseshoe Lake and Park, Green Lake, and Marshall Lake. The City, with its wooded parklands, beautiful residential gardens, and lakes and streams has created an excellent habitat in which the deer population is flourishing. Shaker Heights is home to approximately 26,000 residents.

Shaker Heights being an inner-ring suburb that is densely populated and predominately residential presents many deer culling challenges. The majority of the City-owned land is parks as well as small sections of wooded patches throughout the City.

The precision marksmen conducted site surveys throughout Shaker Heights on the City owned land looking for deer activity, as well as surveying the topography and assessing pedestrian and vehicle traffic and proximity to homes and streets. Areas were identified where the risks involved with culling deer could be managed.

Deer Management

Lethal culling of deer was carried out from January 3, 2018 through February 5, 2018. The precision marksmen culled Monday through Thursday. These days were selected due to the increased pedestrian traffic on Friday, Saturday and Sunday in the areas near the bait sites. The precision marksmen were only able to harvest deer on City-owned land.

One of the keys to this year's success was again being able to have a flexible schedule to address police-related matters and adapt to changing weather and deer patterns. Flexibility and adaptability were critical in being effective.

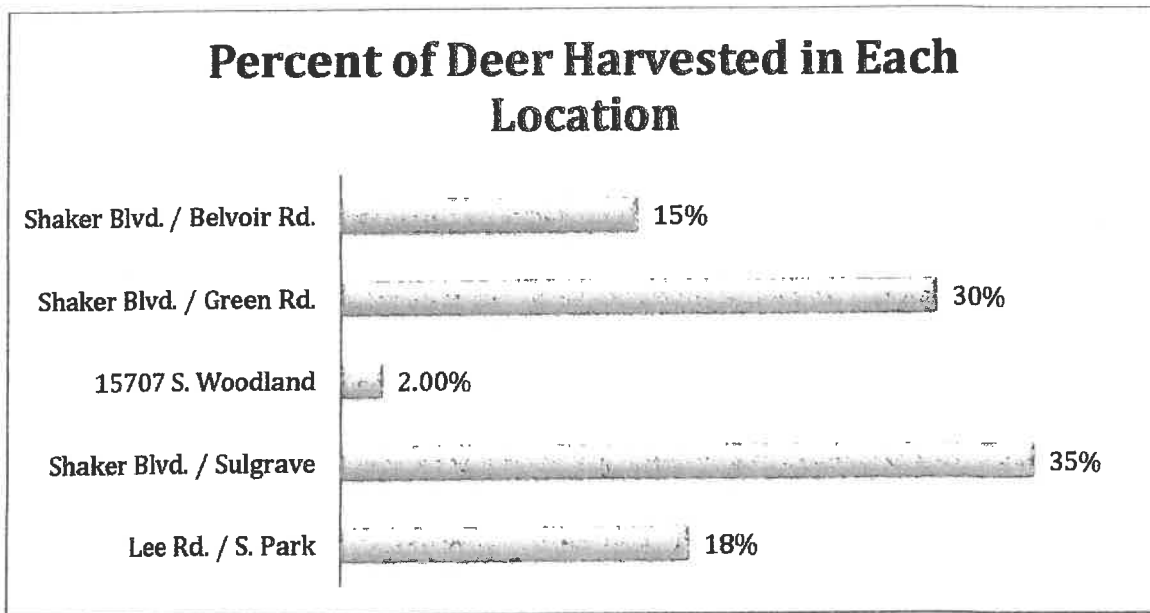
The marksmen were able to relocate to where the deer were. The marksmen were able to utilize real time intelligence from the bait team, officers, and the wireless trail cameras 24/7 and adapt to intercept deer.

The harvest breakdown is as follows:

- Shaker / Belvoir 6 deer or 15%
- Shaker / Green 12 deer or 30%
- 15707 S. Woodland 1 deer or 2%
- Shaker / Sulgrave 14 deer or 35%
- Lee / South Park 7 deer or 18%

80% of the deer were harvested in Unit 3. Unit 3 is 83 acres in size. The RTA tracks run through the middle of the western three-quarters of the unit. All of the deer were harvested in the far eastern portion of Unit 3 near the City of Beachwood border.

20% of the deer were harvested in Unit 4. Unit 4 encompasses Southerly Park and a large wooded area on our most northeastern border near the City of Cleveland Heights.



The precision marksmen attempted to cull deer Monday through Thursday from January 3, 2018 to February 5, 2018.

The precision marksmen spent 288 person hours in harvesting 40 deer during the 2017 - 2018 culling season.

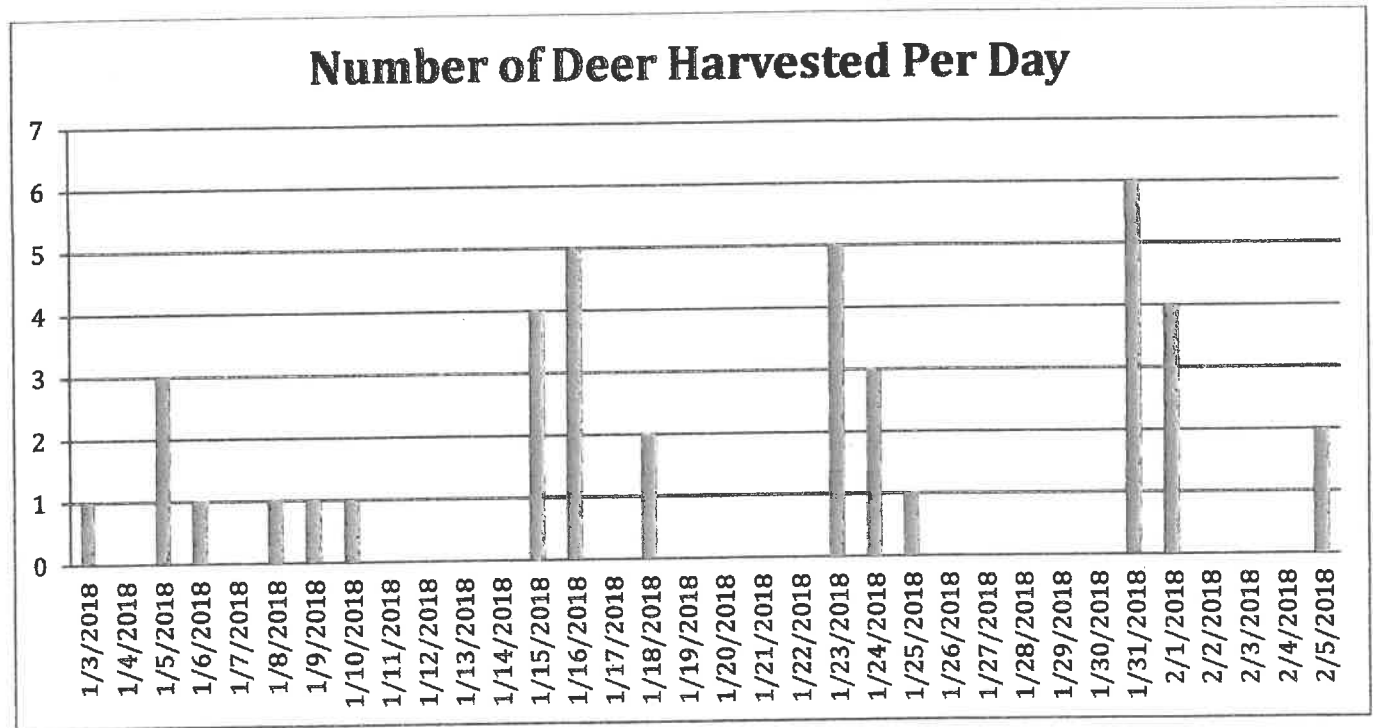


Chart 1: Male vs. Female

- 13 (32%) of the deer harvested were males
- 27 (68%) were females

Total Deer harvested: Male vs. Female

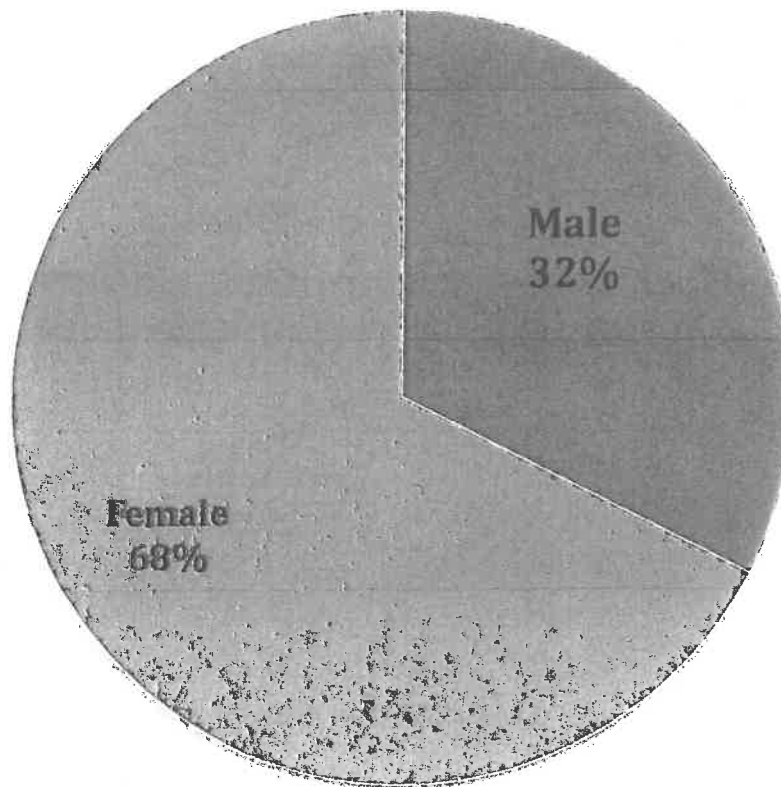


Chart 2: Antlered vs. Non-antlered (all sexes)

Of the 40 deer harvested, 6 were antlered bucks (15%), 34 were antlerless deer (85%).

The Ohio Department of Natural Resources defines antlered and antlerless deer as follows:

"Antlerless deer include deer without antlers, and deer with antlers less than 3 inches in length."

"Antlered deer are deer with at least one antler 3 inches or longer in length."

Deer Harvested: Antlered vs. Antlerless

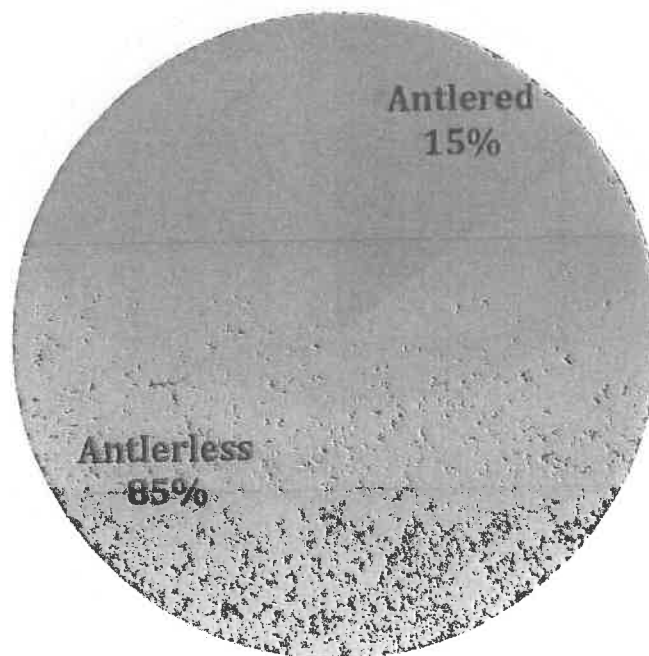


Chart 3: Fetus information

Of the 27 female deer harvested, 21 (78%) were carrying fetuses.

Of the 27 female deer harvested, 6 (22%) were not carrying fetuses.

Out of the total of 27 female deer harvested, there were 38 fetuses.

Out of the total of 27 female deer harvested the average number of fetuses was 1.5 per female.

Avg # of fetuses - 1.5 per female deer

Percentage of Deer Carrying Fetuses

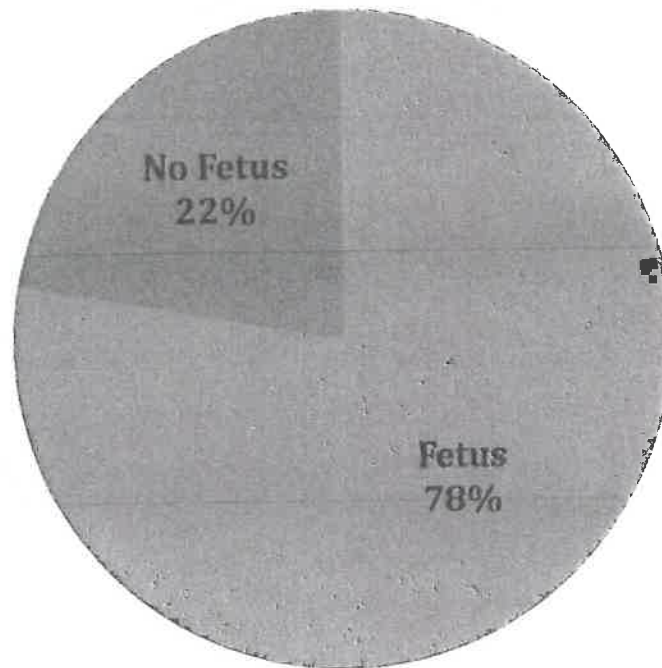
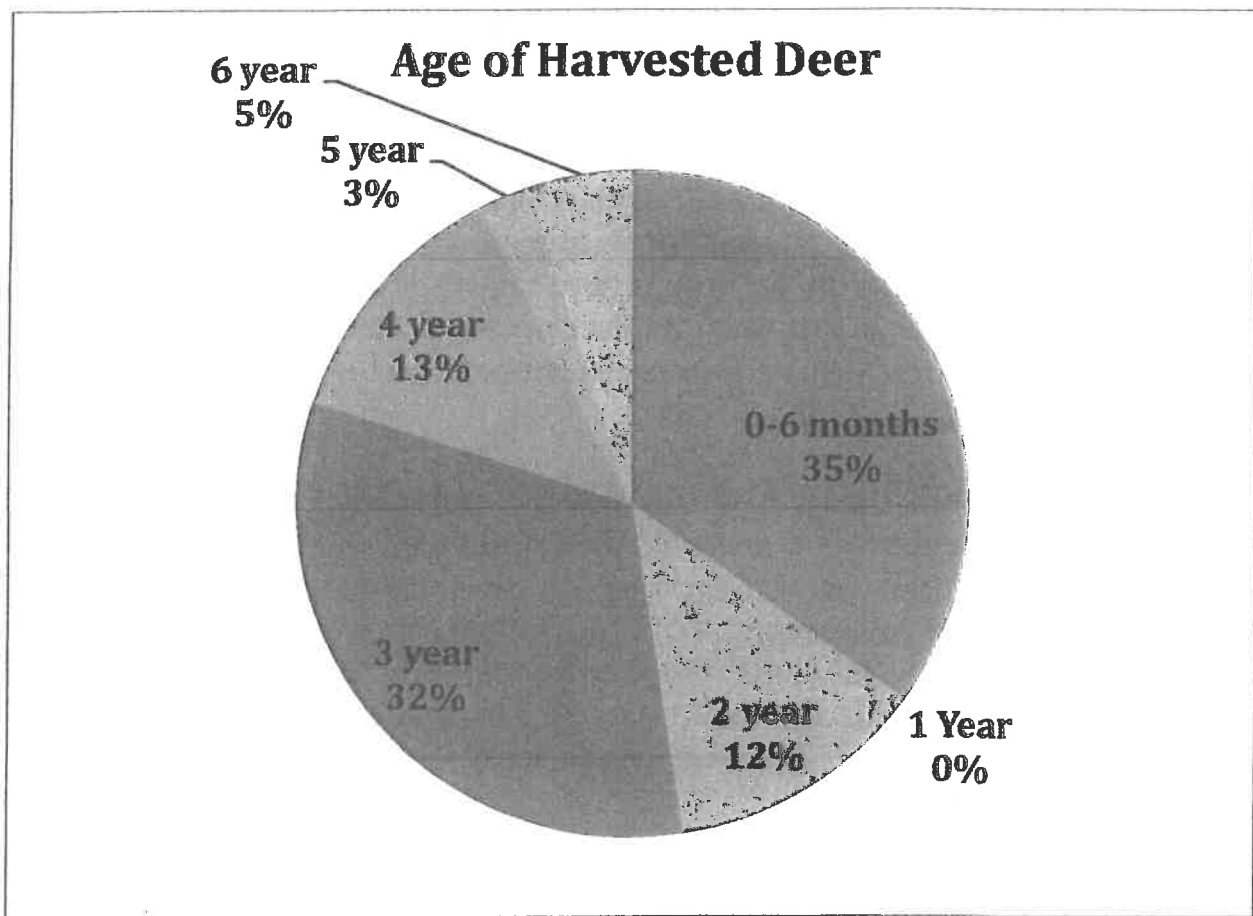


Chart 4: Age of Harvested Deer

Out of the 40 deer harvested:

- 35% were 0-1 years of age
- 12% were 2 years of age
- 32% were 3 years of age
- 13% were 4 years of age
- 3% were 5 years of age
- 5% was 6 years of age



Culling Estimates

The precision marksmen harvested a total of 40 deer. 78% of the 27 female deer had a total of 38 fetuses. Last year they harvested total of 40 deer. 74% of the 19 female deer had a total of 29 fetuses. The January 2018 season was a success as we filled all 40 allowable tags in a reasonable amount of time, considering the many challenges that were overcome. We will continue to evaluate the information received to measure the impact of culling the deer.

The initial requested number of tags from the DNR was based on the 2015 aerial study, reported deer per square mile in adjacent cities, reports from officers, data evaluated from police deer calls for service, accidents and reports from the service yard concerning recovery of dead deer as well as the citizen surveys. SHPD worked closely with Mr. Geoff Westerfield from the DNR in determining the amount of tags.

According to the aerial survey performed by Davis Aviation in 2015, there were approximately 10 deer per square mile within Shaker Heights. It should be noted that the aerial survey is just a snapshot in time. Deer movement is dynamic and therefore deer populations on the fringes have impact within Shaker Heights. The City of Beachwood has an estimated 30 deer per square mile, with a considerable concentration of deer on Shaker Heights eastern border. University Heights has an estimated 14 deer per square mile.

During the month of January 2018, the precision marksmen observed deer on a daily basis. Multiple deer were observed throughout the City. We received reports from residents that deer were in their yards. The precision marksmen averaged seeing 20 to 25 deer daily during the 2017 - 2018 culling season. The majority were observed in residents' yards eating and bedding down. The ratio of antlered deer to antlerless deer this year had changed. The precision marksmen observed more antlered deer last year. The weather pattern may have caused the deer to shed their antlers earlier.

Deer patterns changed from last year. The 2017 - 2018 season's weather pattern was substantially different from last year; last year was unseasonably warm. The precision marksmen were able to cull more deer during cold weather patterns both this year and last year. There was a higher likelihood of deer coming to bait in the cold weather. The precision marksmen did not see the same amount of deer activity in the area of Lee and South Park; this could have been a result of the culling or change in white acorns in the area.

The precision marksmen did not see the amount of deer in the area of 18800 North Park that was observed last year. Only one 10-point buck was observed. Last year we harvested 20% of the deer from that location.

There are approximately 25 to 35 deer in the cemetery at Warrensville Center and Chagrin in Unit 1. We have received reports from both residents and officers that there have been multiple deer sightings in Unit 1.

The precision marksmen have observed many deer in the area of Shaker Blvd. near the City of Beachwood line. Multiple sets of deer tracks have been observed coming out from behind homes on both west bound and east bound Shaker Blvd. The precision marksmen have continued to see multiple fresh tracks and deer on camera after completion of the 2018 cull. They have received calls from a resident in that area that reported four deer in her yards; the resident sent photos.

We have harvested the majority of deer on the Beachwood border for two years, and we are receiving reports and observing deer on a regular basis in that area.

We consistently have received reports of a herd of approximately 8 to 10 deer at Torrington and South Woodland in Unit 4. Officers have reported several deer sightings in this area as well.

Both precision marksmen were surprised to see the number of deer on a regular basis throughout the City. Deer were observed feeding in backyards and along the road.

We will continue to evaluate results from our resident survey. We were disappointed that we were not able to obtain the results from the Nature Center plant study and look forward to evaluating the plant survey results in the future.

We will continue to work with the Ohio Department of Natural Resources, Division of Wildlife to evaluate our Deer Management Program.

2017 - 2018 Season / Lessons Learned

Training

Training played a defining role in the precision marksmen's success. The training evolutions throughout the year combined with the Cleveland Metroparks, provided the marksmen with skills necessary to manage the risks of deer culling in an urban environment. The precision marksmen again trained at the Cleveland Metroparks range this year. Once again, training for a month prior to the start of the culling season is critical to maintaining the depreciable precision skill set required to harvest deer in an urban environment.

Baiting / Sites

Critical to the success of the culling program is the art of baiting. Having an experienced bait team can mean the difference between harvesting deer or not. This year the City contracted with Nuisance Animal Removal LLC.

The precision marksmen are harvesting deer in a densely populated urban area. They are substantially curtailed in the ability to find suitable bait locations on City-owned land. Currently the precision marksmen have four to six sites that are suitable for baiting on City-owned land. They will continue to explore other opportunities throughout the City.

The deer were significantly more wary this year than they were last year. The precision marksmen noticed the deer would see them and flee from the area. They observed deer utilize their sense of smell and the deer were quick to warn other deer by snorting. As a result, once a deer was engaged the other deer quickly ran and, in most cases, did not return.

Due to the fact that we were only able to access two bait sites, we were forced to monitor those areas continuously. As a result, by consistently monitoring only two bait piles the deer became wary and stopped coming. The area was being over hunted and we were educating the deer. As a result, there were several days that only one or no deer were harvested.

Intercept Deer

The precision marksmen utilized their training and experience actively searching for opportunities to intercept deer. In several cases one of the precision marksmen was able to walk on City property to drive deer to a safe position for the other precision marksmen to safely engage.

We utilized The Fresh Butcher to process the venison.

Constraints / Challenges

The precision marksmen learned there is no simple fix to the deer management issue. Residents have very different opinions about the presence of deer - some view increased interaction between deer and humans as favorable; others view it as problematic. The sharp shooting option that the Deer Task Force has recommended has proven to be safe, humane and efficient. We will continue to explore additional options and come up with responsible recommendations that suit the unique needs of our community.

The precision marksmen were again surprised at the number of deer that were observed throughout the culling season. Even after harvesting 40 deer, the precision marksmen observed deer on a regular basis. Reports from officers and employees as well as photos from the trail cameras, indicate that there are significant amounts of deer in the area. Reports indicate that a large majority of the deer have been seen in backyards and along the roadway. Clearly, it is difficult to access the deer that spend most of their time in residential areas. We have only been able to harvest deer in Unit 3 and Unit 4.

We will continue to explore the option of culling on private property. We need to consider asking residents if they would allow a person to walk through their backyards to push deer to a spot where they could safely be engaged. We need to consider finding a way to be able to cull on the curtilage of the cemetery. We are working hard at finding a way to cull additional deer throughout the City as we need to increase the number of deer culled.

It is difficult to accurately predict the exact number of deer in the City of Shaker Heights. Whereas the precision marksmen are not wildlife biologist, the deer that they observed appeared healthy, with the exception of the two injured deer that looked to be struck by a motor vehicle. Both of those deer were harvested to prevent suffering. The deer observed were not starving. Shaker Heights provides

ideal habitats for deer by providing ample food, water and cover. Instead of looking at the number of deer per square mile, modern deer management looks at trends and the *effects* of deer overabundance, such as deer health, ecosystem health and deer-human conflicts.

When it comes to urban deer, wildlife biologists often advise that instead of asking how many deer an urban environment could biologically support, the more salient task is assessing how many deer a community finds acceptable - the social carrying capacity.

The goals of the Deer Management Program are difficult to achieve due to many variables along with the multiple roles and responsibilities of both lieutenants that were involved. There were multiple police projects that needed to be managed simultaneously and deer management was affected due to having to reprioritize. The Program calls for both lieutenants to dedicate two months and one lieutenant to dedicate three months for deer management along with their other responsibilities. Even with the flexibility afforded by upper command, both lieutenants were working around the clock during the months of December and January. This causes competing interests and continual reprioritization and ultimately affects the officers that they lead.

Recommendations for 2019

Drive the deer

- Continuous training
- Continue to search for suitable vendors
- Continue to locate and intercept deer
- Maintain current budget
- Pursue locating additional sites for culling
- Pursue private property culling opportunities
- Consider asking residents to allow access to move deer out of yards

The precision marksmen indicated that due to the weather conditions and the changes in deer patterns, as well as increased alertness of the deer, that their approach had to be modified.

We utilized more bait this year due to weather conditions. Additionally we found it difficult to locate a butcher that was able to accommodate our specific situation. The butcher that was able to assist required that the deer be field dressed prior to arriving at the shop; this was an increased cost. Additionally, the butcher's location was a longer distance from Shaker Heights and there was an increase in transportation cost.

Clearly, culling in the urban environment requires specialized skills and consistent training to maintain the precision marksmen skill set which is critical to the Program's success.

The precision marksmen have reported seeing multiple deer in backyards. We need to continue to explore the possibility of culling on private property. The precision marksmen would perform a site assessment as to the feasibility of safely harvesting the deer on a case-by-case basis.


I recommend that we strongly consider keeping the operating budget the same, although we operated within budget this year. There are many variables that effect deer culling, as we experienced this season. We need the flexibility of continuing into the month of February and March. We may need to bait more or less considering the weather and deer patterns. There may be a situation where police priorities may dictate reprioritizing assets. Additionally, we may find that we need to increase the number of deer culled for the 2019 season, which will affect processing costs.

I would like to thank Chief Jeff DeMuth, Commander John Cole and Commander Mike Rowe for allowing the precision marksmen the flexibility to change schedules and focus on the mission of deer management. Clearly, having two officers assigned to deer management substantially impacts police operations.

I would also like to thank Sergeant Dan Clementi, Sergeant Troy Allison, Sergeant Parker Adrine, Ms. Karen Traylor, Ms. Shelly Rhome, Mr. Andrew McMillin, and Jailer Robert Williams for their hard work and dedication while members of their units were focused on deer management.

CITY OF *Beachwood*
INTEROFFICE MEMORANDUM

TO: Public Works Committee
Justin Berns, Chair
Alec Isaacson, Member
Barbara Bellin Janovitz, Member
James Pasch, Member

FROM: Tina M. Turick, Assistant Administrative Officer 

DATE: August 15, 2018

SUBJECT: August 20th Work Session – Sidewalks

As a result of previous meetings and discussions with City Council, the administration was asked to provide City Council with additional information in terms of financing/costs for implementation of a program to provide sidewalks where none exist.

Attached for your review and information spreadsheet prepared by Director Heiser. Mayor Horwitz is interested in moving forward with this project and is looks forward to further discussion regarding this matter.

T.M.T.

Cc: Martin S. Horwitz, Mayor
Diane Calta, Law Director
Larry Heiser, Finance Director
Gary Haba, Police Chief
Willian Griswold, Building Commissioner
Chris Arrietta, Assistant Service Director
Whitney Crook, Clerk of Council

Enclosure: Spreadsheet

City of Beachwood Sidewalk Proposal

Year	Street	A			B			C
		Property Owner (Per Property	Per linear foot	Per Property	Per linear foot	City Cost	Property Owner Cost	
2019	Annesley, Hurlingham, Selkirk	\$ 648,808	\$ 25,952	\$ 23.77	\$ 11,404	\$ 24.38	\$ 363,703	\$ 648,808
		\$ 484,613	\$ 10,311	\$ 16.01	\$ 6,299	\$ 9.78	\$ 188,565	\$ 484,613
		\$ 159,946	\$ 11,425	\$ 33.15	\$ 3,927	\$ 11.39	\$ 104,967	\$ 159,946
					<u>Totals</u>	<u>\$ 657,234</u>	<u>\$ 636,133</u>	<u>\$ 1,293,367</u>
2020	Science Park	\$ 97,723	\$ 48,862	\$ 23.83	\$ 24,055	\$ 11.73	\$ 73,668	\$ 97,723
		\$ 328,200	\$ 54,700	\$ 16.29	\$ 35,481	\$ 10.56	\$ 115,317	\$ 328,200
		\$ 244,888	\$ 40,815	\$ 13.97	\$ 28,658	\$ 9.81	\$ 72,940	\$ 244,888.00
					<u>Totals</u>	<u>\$ 261,925</u>	<u>\$ 408,886</u>	<u>\$ 670,811</u>
2021	Community Drive	\$ 192,275	\$ 11,310	\$ 35.77	\$ 3,075	\$ 9.73	\$ 139,998	\$ 192,275
		\$ 243,442	\$ 60,861	\$ 45.29	\$ 14,564	\$ 10.84	\$ 185,188	\$ 243,442
		\$ 109,095				\$ 109,095		\$ 109,095 #
		\$ 214,190	\$ 53,548	\$ 52.05	\$ 10,789	\$ 10.49	\$ 171,034	\$ 214,190
					<u>Totals</u>	<u>\$ 605,314</u>	<u>\$ 153,688</u>	<u>\$ 759,002</u>
	Bryden Road Hermitage	\$ 1,299,269	\$ 15,467	\$ 22.55	\$ 6,179	\$ 9.01	\$ 780,265	\$ 1,299,269
		\$ 16,011	\$ 16,011	\$ 22.87	\$ 7,471	\$ 10.67	\$ 8,540	\$ 16,011
		\$ 4,038,460				\$ 2,313,279	\$ 1,725,181	\$ 4,038,460

Plan A Complete Assessment of Costs
Plan B Assess for just the sidewalks
Plan C City Pays for it all

Assessment factors: present value a 2.0% interest rate: \$5000 per resident equates to future value \$6094 over the 10 years.

- no property owners at this point in time

Formula 100% linear grading, concrete walk, sealing
50% traffic maint. topsoil, seeding mulching sodding

There was a contingency amount applied of approximately 10% so I used that as well