

**PATHS TO THE COMMUNITY:
HOW CAN PUBLIC GARDENS LINK
TO THEIR NEIGHBORHOODS**

A Project Paper

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ABSTRACT

In a fast-changing world where environmental loss is proceeding at an unprecedented rate, public gardens and arboreta are re-evaluating not only their role in society but also their connections with the local community in both a moral and economic sense. To investigate how they are reaching out to their immediate neighborhoods, 61 gardens, who were thought to have, or be planning, physical links into their communities, were surveyed.

From the sixteen that responded and the nine that were further interviewed, a pattern emerged for a set of criteria that are required for a link's success. It would appear that the following five traits need to be found not only to make it easier to create links in the first place, but to also ensure that they are adopted, maintained and watched over by the community, :

- creating a link between destinations
- becoming a destination
- working with other bodies or organizations
- working with the community
- employing some form of narrative.

It was therefore thought important to interview other organizations with a record for successful trails, to determine how they would recommend achieving these five traits.

It is hoped that by presenting what public gardens are attempting to accomplish with physical community links, and offering a compilation of best practices for the success of these links, others will consider the importance of the role they play within society and what can be done to facilitate that role.

BIOGRAPHICAL SKETCH

After spending much of my career as a landscape contractor, I began working at the Sir Harold Hillier Gardens and Arboretum in 1994, in a variety of roles, eventually becoming Head Gardener. During my eight years there I became increasingly concerned that, despite being one of the most comprehensive collections of hardy trees and shrubs in the world, a significant proportion of the local community was unaware that such an important botanical and horticultural resource existed within their midst.

In January 2003 I joined the Master of Professional Studies degree program in Public Garden Management within the Horticultural Department of Cornell University. Here I have looked at how gardens can connect with their local communities through the use of physical links and trails. Before starting this MPS course I was attending the Graduate degree program in Landscape Architecture at Greenwich University in London. I have continued these studies in absentia while at Cornell, and will return to complete this degree upon my return to the UK this fall.

While at Cornell, one of my Landscape Architecture studio classes, which focused on the Ithaca waterfront, introduced me to the Cayuga Waterfront Trail (CWT) and its coordinator, Rick Manning. That spring I received the Edna Bailey Susmann Award which enabled me to spend the summer working for the Cayuga Waterfront Trail Initiative (CWTI). Here my time was divided between practical work downtown on the trail itself and more academic work spent at home and in Mann Library at Cornell. On the trail, I was preparing new planting areas, weeding existing planting beds and planting an overlook, across the inlet from The Farmers' Market. The remainder of my time was spent preparing a policy document which addresses the horticultural and interpretive design of the entire trail corridor, preparing material for a

social and natural history interpretive narrative and initiating a volunteer program. More importantly, perhaps, I was introduced to the time-consuming and sometimes frustrating process of creating a trail.

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My advisor Don Rakow has always been patient, supportive and available as have the other members of my committee, Nina Bassuk and Sonja Skelly. Without Nina's friendship and help earlier in my career, I would not be here today.

One of the most valuable aspects of attending a University like Cornell is the opportunity to interact with so many incredible people. Although too numerous to mention individually, I thank all those students and staff of the Horticulture and Landscape Architecture Departments who have made my time here more interesting, fulfilling and fun.

Without the help of those public garden and other professionals who completed the survey and allowed time within their busy schedules for me to interview them, this study would not have been possible. One who requires a special acknowledgement, is Rick Manning, whose friendship and support have been a guiding light throughout this project.

Finally, I would like to thank the tireless support given to me by my wife Katrina Thomas. During the mad frenzy that has been my time at Cornell, she has maintained a clear head at all times and has been able to keep me focused. I would not have been able to do this without her.

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CHAPTER ONE

INTRODUCTION: THE ISSUE OF PHYSICAL LINKS

From a brief investigation into the mission statements of American Association of Botanic Gardens and Arboreta (AABGA) members, it can be seen that the vast majority of public gardens aim to represent the communities beyond their boundaries through their education, conservation or accessibility missions. Yet many seem to find this connection fraught with frustration. In 2005 the entire AABGA conference will focus on the many ways public gardens can connect with their communities (AABGA, 2004) The aim of this conference will be to discuss experiences, cross-fertilize ideas and develop a strategy of how best to proceed with this fundamental role.

When working for the Sir Harold Hillier Gardens and Arboretum (now the Sir Harold Hiller Gardens), in southern England, I was often dismayed by how ineffectual the efforts to engage the local community seemed to be. Looking around the garden on a busy day, visitors tended to fall within the standard public garden demographic spread, white, middle-class, elderly and female. Southern England may be predominantly white, but it certainly is not only middle-class and elderly; 34% of the local population has a professional occupation or is employed in a managerial position and 13% is aged between 60 and 74 (Hampshire County Council Census 2001). The visitor profile certainly did not match these statistics; where was everyone else? The education program, although highly regarded was also attracting, in the main, middle-class white school children, and elderly middle-class, white women.

The entrance fee at £6.00, approximately equivalent to \$11, (£5.50 for concessions and no charge for children under 16) meant that some people would be excluded. Week day opening hours of 10am to 6pm also restricted access for working people to the weekends. One initiative of free late-night opening one day per week

during the summer months was successful in that it attracted numbers but the visitor profile remained the same.

Another obstacle was most definitely the lack of accessibility by any means other than by motorcar. Public transportation was almost non-existent (there is now a bus service running on Sundays and public holidays) and there were no sidewalks on either side of the approach road, a rural single lane highway with a 60 mph speed limit and an average of over one accident per year. The speed limit has now been reduced to 40 mph but the absence of sidewalks remains. It struck me that if a footpath or trail could be installed that would link the main entrance of the gardens to a point closer to the community and public transportation, maybe more of that local community, the younger members of which are likely interested in recreation at least, could be encouraged to visit. The garden's mission after all was to develop and maintain a place for conservation, education *and* recreation.

Some time in 2000 I happened upon an article in *Public Garden* by Dawn Proctor, then Director of Development at Olbrich Botanical Gardens, in Madison, WI (Proctor, 1996, pp 12-15). Proctor spoke about the importance of public gardens attracting different groups of people for different reasons. Not everyone wants to look at plants that might be suitable for their gardens at home nor do they want to hear about how we are destroying the planet and that our only route to salvation is through conserving what wildlife we have left. Some people simply want to visit a garden for recreation. Proctor seemed to be addressing some of the issues that had been at the back of my mind. The following passage certainly struck a chord: "Perhaps there is an area on the perimeter that could be developed as a garden walk with a public benefit similar to the more protected areas. Is there a way to link the garden to related recreational services like bike paths, boats or public transport?...Are gardens seen as part of the larger picture in terms of recreational greenspace for cities and counties and

portrayed as such in local politics and to the public.” I began to wonder whether other public gardens were addressing this and if they were, how? Would the implementation or adoption of physical links provide one way of reaching out to the local community? I decide to contact public gardens and ask.

In this study, I have defined the term ‘physical link’ as follows:

Any corridor that enters or adjoins the grounds of the organization and which provides access for the community or has the potential to do so. Examples may include but are not limited to: formal or informal paths; themed or unthemed trails; bike and leisure paths; byways and greenways.

Many such corridors exist already. Most are exploited by mankind in one way or another, some are used for recreation, others in a more utilitarian way by statutory undertakers. Some are high profile and many are visited or passed through frequently. The hundreds of thousands of acres these areas occupy could be conceivably viewed as an important and under-utilized reservoir of public open space.

When questioned about the importance of linking the gardens they represented with their local communities, those interviewed presented the advantages of employing or developing corridors in various ways. These responses ranged from “*by improving the access and improving the trail system...we hope to dramatically increase the public’s use of the site*” (Bill LeFevre, Bartram’s Garden) and “*part of our stated intention was to bring more people by our gates. And...by linking to broader communities, we might increase our visitors*” (Paul Meyer, Morris Arboretum) to “*the intention...is to link the arboretum to the...subway and bus system*” (Richard Schulhof, Arnold Arboretum) and “*we want to strengthen the link to the other cultural institutions*” (Scot Medbury, Strybing Arboretum). As diverse a set of responses as this may seem, the results can be characterized as follows: carried out in a thoughtful and sympathetic manner, corridors can be used as physical

infrastructure to increase community contact and awareness by raising an institution's profile through publicity, visibility and accessibility. As Moura Quayle concludes in her wonderfully eloquent article, *The 21st Century Hybrid Landscape: Long and Winding Arboreta*, "imagine a long and winding arboreta [sic] that reaches into the city and the countryside, touching people's everyday lives in both subtle and profound ways" (Quayle, 2000).

By becoming more accessible, gardens can more readily reach people who do not currently appreciate the importance of plants to global sustainability. If that exposure, albeit in a local way, is perceived as positive and an improvement to peoples lives, the opportunity exists to deliver the more profound messages at the core of a public garden or arboretum's mission. An intimate and integrated involvement with the community will not only invariably lead to an increase in visits, but is also critical in developing funding opportunities (Hartfield, 1995; Proctor, 1996; Quayle, 2000; Rosen, 1996).

The implementation of physical links is just one of the many options available to botanic and public gardens and other cultural institutions yet the same positive potential gains could be true for any connection made with the community.

The primary goal of this paper is to encourage public garden managers to reconsider their role in society. I suggest that neighborhood links are suitable ways to engage local communities. Furthermore I offer ways that such links may be achieved through the creation or adoption of corridors and trails. I aim first to determine what is important to the success of a corridor and then to present a means of achieving this success. Imagine a network of green ribbons reaching out into the local communities and touching peoples lives in a profound way, each with a public garden at its source.

CHAPTER TWO LITERATURE REVIEW

There is a plethora of literature explaining the advantages of cultural institutions engaging with their local communities. Regina Hartfield (former community relations coordinator at New York Botanical Garden), in her article ‘Community Relations at the New York Botanical Garden: Forging New Relationships’ (Hartfield, 1995, pp8-10) suggests that only by reaching out to the community and engaging in dialog can each side understand the needs and requirements of the other. By explaining their missions, gardens have the opportunity to dispel the perception of being boring, elitist organizations aimed at middle-class, middle-aged, white folks. Hartfield goes on to say that through an increase in community support come funding opportunities. Matthew Rosen (Horticulture Manager for the City of Des Moines) would certainly agree with this final point. Improving an institution’s image within the community as a caring and valuable neighbor, involved in local initiatives and activities is a critical component, he says, to a garden’s fund-raising potential. Rosen further stresses, in ‘Building Bridges’ (Rosen, 1996, pp19-21) the importance of ‘building bridges’ with the tourism industry. By promoting his organization as a tourist destination and through his involvement with the local Chamber of Commerce, Rosen has been able to prove his importance as a valuable community resource. Both recognize the merits of taking their messages into the community in what are generally considered to be outreach initiatives and not relying upon that community to make the effort and approach them. Both authors are (or were) involved with public gardens that have trails on their doorsteps and could, perhaps, investigate ways for their organization, through the provision of a physical link, to engage with the local community.

Paul Meyer (Director of the Morris Arboretum) points out in his article 'From the Living Collection to the Urban Forest' (Meyer, 1994, pp12-13, 44), that public gardens are ideally placed, both geographically and strategically, to become significantly involved in urban greening initiatives. As most are located within urban or suburban areas, they are already "an integral part of the urban forest" and can easily use their collections to display urban management techniques. Also, as the majority already have well established educational programs, the teaching and technical expertise already exist. Meyer believes that armed with such resources, "botanical gardens and arboreta are uniquely qualified to leap the gardens walls and to play a major role in the greening of our cities." The Chicago Botanic Garden did just that. In her article, 'Urban Forestry? Environmental Education? Public Gardens? Yes!' (Eberbach, 1994, pp 18-22), Catherine Eberbach (formerly Manager of the Children's Adventure Project at the New York Botanical Garden) highlights an outreach project, 'Green Chicago,' which was developed by the Chicago Botanic Garden's Urban Horticulture Department, and which provided a three year commitment of technical and material support for community planting projects. Such garden projects "rang[ed] from vegetable plots to shaded parkland settings." This initiative has now been superceded by others administered by the Botanic Garden and City of Chicago. These two articles highlight the importance of community greening and how public gardens can become involved. Although not mentioned specifically, however, I would suggest that gardens can link physically with their communities using urban forestry projects to create green corridors.

Robert Gutowski (now Director of Public Programs at the Morris Arboretum) stresses the need for community participation in any urban forestry project if it is to be successful ['The Basics of Urban and Community Forestry' (Gutowski, 1994, pp 8, 10-11)]. He argues that many communities recognize the importance of their natural

resources to air and water quality, recreational and aesthetic opportunities and so their general well-being and health. Gary Watson and George Ware (Senior Research Scientist and Dendrologist Emeritus respectively, at the Morton Arboretum), would agree. The evidence that urban greening projects “make significant contributions to the physical and mental health of urban residents” is quite compelling, they state in their article ‘What Botanical Gardens Can Contribute to Urban Forestry Research’ (Watson and Ware, 1994, pp 24-28). Both institutions have been intimately involved with urban forestry programs for some considerable time, facilitating many much-needed projects, yet the use of green corridors is again unmentioned. It should be pointed out, however, that The Morris Arboretum is now a key player in an important riparian restoration and trail link initiative.

There is also much written about the analysis of public space and the built environment. Christopher Alexander and his team in *A Pattern Language* (Alexander, 1977) have broken the built environment down into its constituent parts to see how it does or doesn’t work. Alexander argues that not only do contemporary design methods fail to produce a built environment that satisfies the demands placed upon it, but more importantly perhaps, they fail in not fulfilling their basic requirement, that design needs to recognize its social responsibilities and help improve the human condition. Specifically, Alexander advocates that for areas of accessible green-space to be used, they must be within three minutes of the community otherwise distance overwhelms the need. Tom Turner in his article, ‘Greenways, blueways, skyways and other ways to a better London’ in *Landscape and Urban Planning* (Turner, 1995, pp 269-282), considers this problem and suggests that ‘ways’ should provide a network or web of recreation, commuting and conservation corridors. Each use is represented in a discrete layer, a walking layer, a bicycling layer and an ecology layer, using Alexander’s ‘Pattern Language’ as a guide. Turner argues that there is a ‘good’ way to

organize these corridors which is to exploit or create nodes where overlapping patterns form a connection. Turner offers various types of 'way' to connect destinations which are matched to the requirements of their location and who will use them. Although both talk in general terms about the importance of nodes as dynamic points of community activity and green-space as vital to the human psyche, neither advocates the use of corridors as community gateways.

In 1987, the report of the President's Commission on Americans Outdoors recommended that "communities establish greenways, corridors of private and public lands and waters, to provide people with access to open spaces close to where they live, and to link together the rural and urban spaces in the American landscape." In *Greenways for America* (Little, 1990), Charles Little examines a range of citizen-led greenway initiatives which have been successful in: linking regional parks and public open space by creating recreation ways; preserving natural corridors for wildlife migration; and protecting scenic and culturally important sites from development. These public corridors, he insists, offer communities access to much needed linear open spaces for recreating and enjoying nature, close to home. Anne Whiston Spirn considers one of these Greenways, the Platte River Greenway, in Denver Colorado, in her book, *The Granite Garden: Urban Nature and Human Design* (Spirn, 1984). This urban greenway now links eighteen waterfront parks with ten and a half miles of interconnected trails within the city of Denver. Both authors recognize the need to educate citizens in the benefits of not only protecting both riparian corridors and public open space but also in connecting them together. Public gardens could be a source for such links and in many cases, are ideally placed to play a catalytic role in achieving these goals. Through their expertise, public gardens could provide a vital function in what has become what Kermit Parsons and David Schuyler call a

burgeoning movement in their *From Garden City to Green City*, namely the greenway movement (Parsons and Schuyler, 2002).

CHAPTER THREE MATERIALS AND METHODS

In order to accomplish the goals of this report, I first needed to contact representatives from gardens with an interest in physical links and discuss those links with them. Data were captured through the use of a simple survey and telephone interviews. The data were used to create matrices for further interpretation and investigation.

The Survey

I aimed to restrict my initial contacts to those people who were employed by an organization that already had, or were considering implementing or adopting a community link. The first stage was to make contact with all botanic and public garden acquaintances, introduce them to the project and determine which organizations would be worth surveying. I hoped to contact a broad spectrum of institutions to ensure that those in urban, suburban and rural locations as well as those on university or college campuses were included. Additional potential contacts were selected from the 2003 AABGA Membership Directory. (A full list of contacts appears in Appendix A.) I consulted Professors Don Rakow and Nina Bassuk and Cornell Plantations Director of Education, Sonja Skelly over this list as well as the range and content of the survey questions. Table 1 below shows this list of questions.

On March 3rd 2004, I sent the survey to each person on the contact list as a Microsoft Word document attached to a letter, (copies of this letter and survey appear as Appendix B). Respondents could either complete the survey and return it as an e-mail or could visit a website where the survey was posted, to complete it on-line. Of the sixty addresses to which the survey was sent, six were returned due to out of date information. I did, however, manage to determine correct addresses for two of these.

Twenty-three (38%) responded by the deadline of March 15th, nine by e-mail, thirteen using the on-line facility, and one via fax.

Template of Survey Questions	
1. Does your organization own, manage or have access to a link?	7. Does your organization maintain the link, either fully or partly?
2. Is any such link (or are any other links) planned for the future?	8. Where is your organization situated?
3. Does the link appear in any landscape or strategic master plan?	9. How close is your organization to the nearest form of public transportation?
4. Was (is) the creation of the link to satisfy a need highlighted by a landscape or strategic master plan?	10. Does your organization's mission actively encourage visitor diversity?
5. Was your organization involved in the establishment of the link?	11. What measures does your organization take to engage with the local community? (please mark each that applies)
6. How is the link (to be) used? (please mark each that applies)	12. May I call you for a brief telephone interview?

Table 1

I collected the data from the returned e-mails and from the on-line server and compiled these into a Microsoft Excel spreadsheet. (Appendix C.)

Of the eleven numbered questions, six required yes/no answers, four required boxes to be checked from a selection list and one requested a short answer. Two of the check-box questions allowed space for expansion if the option 'other' was chosen. A twelfth yes/no question sought permission for further questioning and space was provided for contact details to be entered.

The Interview

Of the twenty-three contacts who responded to the survey, nine were approached for a follow-up formal, structured telephone interview that was recorded for possible later transcription. Those selected for further questioning satisfied certain criteria: they had to be willing to be interviewed; they had to have indicated that the

institution they represented was involved with some form of link (as previously defined) either currently or projected for the future; and finally, they had to consider their link successful. To facilitate comparison later, I created a template of questions to ensure that each interview followed a similar path. See Table 2 below for list of questions.

Template of Telephone Interview Questions	
1. Brief description of the link	13. How many people use the link? (estimated if necessary)
2. Where does it run?- through what types of neighborhoods?	14. Why is the link used?- how does it link to the garden?
3. Is it a narrow corridor or part of a larger space?	15. Has use been encouraged through incorporation of novel or interesting developments?
4. What is the surface?	16. Has the community been involved at any stage? - has pride and local ownership been encouraged?
5. Is it planted? - with what? - is planting an important element?	17. Does the link appear in a masterplan?- how?
6. Is a sense of common ownership encouraged?	18. Is the link maintained by the garden?
7. What is the primary purpose of the link?	19. Is the link close to public transport? - what type?
8. Is there any signage? - is there a narrative that is exploited?	20. Does link encourage diversity at the gardens? - is that its intention?
9. How does the use differ from its intended purpose?	21. Does the garden characterize or address the local cultural identity? - how?
10. Is use actively encouraged?	22. How does that community recreate?
11. Who are the users?	
12. Do you have any visitor demographic information I can access?	

Table 2

Although the questions were ostensibly the same for each person being interviewed, a certain degree of latitude was employed to allow for a variety of link types to be discussed in a similar way and to provide opportunities for off-topic discussion. This approach provided an opportunity to capture a comprehensive data set beyond initial preconceptions yet kept the interview comparable.

The interview provided each respondent with a forum where their project could be critically considered. They openly discussed what aspects of their link seemed to work and what apparently did not, and, in some instances, how certain elements could be changed to provide a better link.

Interpretation and Investigation

From the responses to the questions contained in both survey and interview certain common traits seemed to emerge that perhaps pointed to the success of a link. These were organized under headings in a matrix which enabled them to be compared and contrasted, one against the other. See Appendix D for full comparison matrix of transcribed interviews. An abridged version of this matrix appears before each case study discussed.

To test the validity of what appeared to be common traits to success, information was gathered from interviews with representatives from the Cayuga Waterfront Trail, Ithaca Science Center, and Queens Botanical Garden. These organizations were known for being involved in what are considered to be successful community links. There are many others that could be used instead but for convenience these three were chosen. Their interview questions were targeted to test the importance of, and discover how to achieve, those traits for success.

CHAPTER FOUR

RESULTS: WHAT WORKS IN CREATING A TRAIL?

Overview

The survey was an effective and reliable tool to capture the initial data sought. It was an economic, time-saving and non-intrusive way to establish contact with a range of institutions from a wide geographic pool. Because every institution approached received the same survey and was asked the same questions, it was easy to compare, contrast and evaluate each. Also, from the responses, it was a relatively easy matter to select which respondents would be asked for an interview.

The survey did have some drawbacks and the following characterizations can be made. During the course of their normal working weeks, those contacted doubtless receive many similar surveys and there is always a danger that such an approach may be met with a somewhat blazé attitude. The quality of the data captured relies solely upon a candid and thoughtful commitment by the respondent. People are busy and despite endeavoring to minimize the ‘respondent burden’ (Salant and Dillman, 1994, p101) surveys sometimes fall low on priority lists. Also, surveys of this type tend to be focused and so do not allow much detail or depth in either the questions or the responses (this can also be an advantage of course). A more comprehensive and further-reaching survey becomes a more onerous task to complete and therefore requires an even greater commitment from the respondent. Finally, once the survey has been sent out, the researcher has little control over it (Salant and Dillman, 1994, p37). However carefully worded, some questions are open to a certain amount of interpretation. Despite carrying out several ‘dry runs’ of the survey with colleagues, in an effort to eliminate any opportunity for interpretation, it was found to be impossible to guard against any misunderstanding without being present at the time of completion.

For these reasons and in order to capture more specific data, it was decided to follow up some of those interviewed with a more formal and in-depth telephone interview.

Initial Survey Results

Of the twenty-three people who replied to the initial survey, nineteen replied that they had developed or were developing links. Those respondents who had no involvement with links now, nor expected to have in the future, were discarded, reducing the survey pool to this nineteen. Eight of the nineteen were considering additional links for the future and an additional two were considering the use of links for the first time. Of those links in place, twelve appear in master plans of which nine were created to satisfy a need highlighted by that master plan. (See figure 3 below). Three of the nineteen surveyed represented gardens located in rural areas, five in suburban areas, seven were from urban areas, and four were on university or college campuses.

Survey Results 1				
	Is any such link (or any other links) planned for the future?	Does the link appear in any landscape or strategic masterplan?	Was (is) the creation of the link to satisfy a need highlighted by a landscape or strategic masterplan?	Was your organization involved in the establishment of the link?
Yes	8	12	10	13
No	7	6	4	2
N/A	2	1	5	2

Table 3

When asked “how is the link to be used” sixteen answered “yes” to attracting recreational users such as walkers, joggers, bicyclists, etc; nine answered “yes” to attract a specific target group such as bird watchers, amateur botanists, geologists, etc;

six answered “yes” to their trail having a theme with interpretive and/or educational content; and nine answered “yes” to their trail being an alternative route to provide access to public transportation. (See figure 4 below.)

Survey Results 2				
How is the link (to be) used?				
	By attracting recreational users such as walkers, joggers, bicyclists, etc.	By attracting another specific target group such as bird watchers, amateur botanists, geologists, etc.	As a themed trail with some interpretive and/or educational content.	As an alternate route or to provide access to public transportation or other services.
Yes	16	9	6	9
No	2	9	11	7
N/A	1	1	2	3

Table 4

I find it interesting that the most popular reason for becoming involved with community links is to attract “recreational users such as walkers, joggers, bicyclists, etc.,” and 84% marked this as being one of their reasons. It was difficult to determine if this was a deliberate effort to attract a new audience (as Paul Meyer suggested later) or simply because trails are used predominately by such groups. It would be interesting to look at this further. It is quite likely that many of these recreational users would also be interested in natural history, especially the walkers, so it was not altogether unexpected to find that the next popular aim was to attract such special interest groups. Of equal importance, was to provide an alternative route to public transportation. What was somewhat surprising was to discover that an interpretive or educational theme was not prevalent amongst the trails of those surveyed; only 32% felt that this was important.

Eighteen of those surveyed said that they were trying to engage their local communities through other means such as workshops, in-school programming, etc.

Finally, seventeen respondents agreed to being contacted of which nine were asked for interview. These were:

Paul Meyer, The F. Otto Haas Director	Morris Arboretum, Philadelphia, PA
Mary Burke Curator	UC Davis Arboretum, Davis, CA
Scot Medbury Director	Strybing Arboretum and Botanical Gardens, San Francisco, CA
Bill LeFevre Executive Director	Historic Bartram's Garden, Philadelphia, PA
Peter Hatch Director of Gardens and Grounds	Monticello, Charlottesville, VA
Kris Jarantoski Executive Vice President and Director	Chicago Botanic Gardens, Glencoe, IL
Richard Schulhof Deputy Director	Arnold Arboretum, Jamaica Plain, MA
Holly Shimizu Executive Director	United States Botanic Garden, Washington DC.
Jamie Blackburn Curatorial Intern	Scott Arboretum, Swarthmore, PA

Interviews and Case Studies

During the interview process, certain traits, which contributed to the success of a link, emerged that seemed common to all or most of the organizations interviewed.

These traits were:

- 1. Creating a link between destinations*
- 2. Becoming a destination*
- 3. Working with other bodies and organizations*
- 4. Working with the community*
- 5. Employing some form of interpretation narrative*

As these traits became more prominent, they were called out in a matrix from which it was surmised that each of these may be key to the success of a community link. This matrix appears in Appendix D.

To better illustrate these five-traits, and because so many factors which differentiate the gardens and botanical institutions interviewed (such as location and budget) affect their approach to linking with community, a case study for five of the nine interviews has been presented. Each of these is preceded by a synopsis and an abridged version of this matrix illustrating the five-traits in question for this case study.

I find it interesting that the most popular reason for becoming involved with community links is to attract “recreational users such as walkers, joggers, bicyclists, etc.” Sixteen (84%) of those surveyed who had an interest in links marked this as being one of their reasons. It was difficult to determine if this was a deliberate effort to attract a new audience as Paul Meyer suggested or simply because trails are used predominately by such groups. It would be interesting to look at this further. It is quite likely, for instance, that many of these recreational users would also be interested in natural history, especially the walkers.

CHAPTER FIVE

FIVE CASE STUDIES DISPLAY FIVE TRAITS

Each Case Study is presented in the following format: the name of each organization represented appears as a heading; the name of the person interviewed appears as a sub-heading; a brief synopsis of the link and how it relates to the garden; an abridged version of the interview matrix; followed by the case study.

Note: it should be assumed that text bounded by quotations “thus” has been taken directly from the interview with the garden representative, unless otherwise marked. If a quotation has been taken from another source, the author will appear bounded by parentheses (thus) and appear in the bibliography.

THE MORRIS ARBORETUM OF THE UNIVERSITY OF PENNSYLVANIA
From interview with Paul Meyer, F. Otto Haas Director

Paul Meyer from the Morris Arboretum in Philadelphia, PA, sees the implementation of a new trail as a means of extending the visitor profile. He predicts it will provide access to a potential new market of recreational walkers and bicyclists who will be passing by the gate. This convenient happenstance could be further exploited by offering facilities and special arrangements for such visitors.

Abridged Morris Arboretum Interview Matrix				
Creating a link between existing destinations	Becoming a destination			Employing some form of narrative in the interpretation (plant or otherwise)
(or a combination of these two)		Working with other bodies and organizations	Working with the community	
“You know the Schuylkill Trail gets somewhere between 4 and 500,000 users. ... If we got two percent of them, that’d be 8,000 visitors that we didn’t already have.”		“Montgomery County is actually implementing the trail. We’re giving them a means to do it.”	“when we were doing the official plans for this, there was a lot of [community] interest, a lot of debate”	“We want to use that opportunity to educate our visitors at least in plant identity.”

Table 5

Background

Originally known as ‘Compton,’ the Morris Arboretum was founded in 1887 by John and Lydia Morris, brother and sister from an established family of Philadelphia Quakers. The I.P. Morris Company, an iron manufacturing business, created a great family fortune and ‘Compton’ became the Morris summer country estate, as was customary amongst the wealthy at that time. John Morris died in 1915 and on Lydia’s death in 1932, the 166 acre estate and plant collection were transferred to the University of Pennsylvania to be used as a horticultural and botanical teaching resource.

The Morris Arboretum is located in Chestnut Hill, a wealthy historic suburb of Philadelphia situated at the boundary between the Philadelphia City limits and Montgomery County. The Garden is removed from any immediate community, however, being surrounded by a bucolic rural landscape on one side and Chestnut Hill College on another. The site is fenced on all sides with the only public entrance accessed from Northwestern Avenue, which has no paved sidewalk. This quiet rural road, bisects the land holding with the publicly accessible 92 acres situated to the South-east and a 74 acre research and support site to the North-west. By far the majority of visitors arrive by car, driving up a steep sloping driveway to park in the parking lot, situated at the top of the hill. It is hoped that the proposed trail will provide not only an alternative access for pedestrians and bicyclists, but also a safe link to public transportation.

The Morris Arboretum became the official arboretum of the Commonwealth of Pennsylvania in 1988. It is listed on the National Register of Historic Places, accredited by the American Association of Museums and a member of the American Association of Botanic Gardens and Arboreta. Adult admission is currently \$8, approximately 114,000 people are expected to visit each year and the annual operating budget is in excess of \$3.9 million (Morris Arboretum Annual Report, 1993).

Creating a Link Between Destinations and/or Becoming a Destination

The proposed Wissahickon Trail Link will form part of a 20 mile-long, multi-use trail linking Fairmount Park within the City of Philadelphia, with Fort Washington State Park in Montgomery County (Wissahickon Green Ribbon Trail website). Fairmount Park is one of the most expansive urban parks in the United States and here the trail will have the opportunity to link up with other existing trail networks. Looking South, Forbidden Drive, in Chestnut Hill, heads towards the Schuylkill River

corridor and represents a community gateway through the Wissahickon gorge and on into the heart of Center City Philadelphia nearly 13 miles away. According to Montgomery County, somewhere in the region of 4-500,000 people use this scenic, natural and recreational corridor trail each year already. To the North and the West lies the extensive trail system of Montgomery County.

The trail will start at the confluence of the Wissahickon Creek and the Schuylkill River at Manayunk, where it will link with the *Schuylkill River Trail*, and then follow the corridor of the Wissahickon Creek. It will pass through the Bloomfield Farm Research and Support Facility of the Morris Arboretum close to its mid point and continue to Fort Washington State Park where it will link with the *Cross County Trail*. The 12 feet-wide Northwestern Avenue and Stenton Avenue links are the only sections to receive development attention as multi-use trails. The Northwestern Avenue section runs through Morris Arboretum land and construction of this link will start in early 2005. The Stenton Avenue to Fort Washington State Park link is scheduled for construction in the Fall of 2005.(Wissahickon Green Ribbon Trail website). Ultimately it is planned to extend the trail further north to the Upper Gwynnedd Township in Montgomery County.

One of the attractions here is certainly economic, “part of our stated intention was to bring visitors to our gates,” Meyer says. If 400,000 people are using the existing trail system which runs close to the Arboretum boundary then it might be realistically assumed that a similar number will use the proposed trail. If two percent of these users become visitors to the Arboretum, “that’d be 8,000 visitors that we didn’t previously have.”

Working With Other Bodies and Organizations

Meyer admits that the Morris Arboretum's involvement with the *Wissahickon Trail Link* was "purely serendipitous really." At a retreat organized for the William Penn Foundation, at the Morris Arboretum, Meyer was giving the attendees a tour of the grounds and something he talked about, was "how John Morris had a vision of really connecting Fairmount Park and Fort Washington Park." This information obviously struck a chord because after the tour, "Harry Serrino, who was president of the foundation at the time, said 'What a wonderful idea. If you want to work on that, and resuscitate that idea, we'll fund it.' " This \$150,000 grant allowed for the coordination and support of a feasibility study and the creation of a master plan for the trail and riparian restoration within the Wissahickon Creek corridor (Wissahickon Riparian Restoration Trail Link Master Plan, 1998). It was during this planning that the project was found to fit very comfortably within the larger plans of the Montgomery County Planning Commission.

The Wissahickon Valley Watershed Association, a non-profit conservation group, owns and protects over 600 acres of natural areas within the Wissahickon watershed and, as a consequence, much of the trail from Manayunk to Fort Washington State Park will use existing easements and established walking paths (Wissahickon Valley Watershed Association website).

Collaboration is something that has been fostered throughout the creation of the trail master plan and will remain a crucial element in development and construction phases of the trail. "Montgomery County is actually implementing the trail. We're giving them the means to do it." Without such a partnership, Paul Meyer is quick to point out that the trail would probably never have the opportunity of being realized.

Working With the Community

The Wissahickon Gorge is a linear, urban park that contains the Wissahickon Creek. It passes through, and links to, the communities of Chestnut Hill, Roxborough, Mt. Airy and Germantown. As previously mentioned, Chestnut Hill is fairly wealthy, Roxborough is very middle-class. Mt. Airy and Germantown are very diverse communities “diverse economically, racially and religiously.” The Master Plan states that “the community is the most important partner in this proposal” (The Wissahickon Riparian Restoration Trail Link Master Plan, 1998). Numerous public meetings were held and consultation with these communities has been consistent throughout the development of the feasibility study. The Master Plan goes on to state that “Without the educated assistance and support of the local community, conservation and restoration efforts can have only minimal long term impacts. It is clear that the protection of our waterways and associated habitats requires the support and participation of the local community...The Watershed Management and Landscape Restoration initiatives will continue to build on and expand these outreach efforts.” Meyer agrees and goes on to say, “I think anything that ties something to the community is good for diversity.”

Employing Some Form of Interpretation Narrative

“Landscape design is an important element of the trail,” Meyer insists. Much of the trail corridor will be planted, where necessary, using native plants in a naturalistic way; in an effort to re-vegetate stream banks, for example, which have been degraded by cultivated lawns. Other areas might be sensitively designed to create a softer pastoral landscape. Where the trail passes through the Morris Arboretum, trail users will be able to access the existing plant labeling system. All major trees will have at least name labels and some may even have story labels. There may also be

some instructional signs that “interpret the arboretum as part of the broader valley landscape.”

The Morris Arboretum certainly view the link as an opportunity to “educate our visitors” and to “help the hundreds or thousands of people who use this trail each year” by offering educational, interpretive signage. Through the use of such programming, visitors will have an opportunity to enjoy the natural resources that surround them, and perhaps more importantly, learn how to care for and protect them.

The Morris Arboretum’s involvement with the trail, however serendipitous, will, I think, prove vital for its continued success. The Morris Arboretum has a strong connection and history with urban forestry initiatives through their Urban Forestry and Arboricultural Program. They also have experience of riparian restoration with a section of Paper Mill Run, a tributary of the Wissahickon Creek that passes through the property. Although the content of the interpretation material has yet to be decided upon, there does seem to be a wealth of opportunities available. There must, for instance, be material that was developed for the Paper Mill Run restoration that could perhaps form the basis of any narrative for the Wissahickon Creek. Perhaps there is an opportunity to link the two schemes; the two stretches of water are themselves physically linked after all. The importance of riparian corridors is widely recognized and the science is there to support any restoration work.

Summary

Although Paul Meyer did not discuss working with the community in detail, referring to the Master Plan, he acknowledged the importance of bringing together a comprehensive collection of partners that represent community groups and professional bodies alike. He is particularly interested in how the new link will offer

connections through an existing trail network from the downtown area and other destinations to the Morris Arboretum.

UC DAVIS ARBORETUM
From interview with Mary Burke, Curator

The situation at the UC Davis Arboretum in Davis, California is slightly different from the other studies, in that here, the grounds are the link; between the University campus and its own communities, and from these to the broader, local neighborhoods. Curator, Mary Burke expects the new bicycle link, which was implemented by the City of Davis to remove bicyclists from a busy highway intersection, to provide a much safer communication link with the city communities.

Abridged UC Davis Interview Matrix				
Creating a link between existing destinations	Becoming a destination			Employing some form of narrative in the interpretation (plant or otherwise)
(or a combination of these two)		Working with other bodies and organizations	Working with the community	
“So it’s not exactly a destination ... it’s simply something people encounter, you know, several times possibly as they walk across campus.”	“some people are moving through pretty fast, and other people are jogging, and some people are there to look at the plants.”	“we’re often blindsided by larger campus initiatives ... we’re not privy to all this work. ... [they] offered to pay to move our trees and so forth. So some weeks we’re lucky to do anything else except for dealing with the campus neighbor issues.”	“we kind of have this unpaid security force of little old ladies”	(Due to time constraints, Mary Burke was not asked about the employment of interpretation narrative)

Table 6

Background

The city of Davis is reported to have the highest per-capita bicycle use of anywhere in the United States with bicycles providing 25% of commuter transportation (Federal Highways Administration, National Biking and Walking

Study, 1991)¹. The topography is very flat which made it relatively easy to create a series of regional bikeways during the '60s and '70s.

It is the goal of the City of Davis to create and maintain an integrated system of bikeways. The City recognizes the need to encourage bicycle travel for both transportation and recreation and works to promote bicycle use as a viable, attractive, non-polluting form of transportation and assure safe and convenient access to all areas of the city (City of Davis Website)

The UC Davis Arboretum is owned by the University of California, was established in 1936, and occupies a little under 100 acres along the banks of the old north channel of Putah Creek, in California's Central Valley. The 2 mile-long, narrow, un-fenced site is bounded on three sides by the University campus and the City of Davis on the fourth.

Creating a Link Between Destinations and/or Becoming a Destination

The site is criss-crossed with paths and visitors can enter at the many points of access which are within easy reach of the four parking lots located along its length. Curator Mary Burke points out “we’re heavily impacted by people walking across and people walking along and so forth. So it’s not exactly a destination garden, it’s simply something people encounter...as they walk across campus.” This is what Diane Cary and Kathleen Socolofsky refer to as a ‘visitor corridor’ in their article ‘Long-Range Planning for Real World Results Start with Self-Assessment and Audience Research’ (*Public Garden*, Vol.18, No.4, 2003).

¹ A progress report was released on April 22 1999 which gives a good overview and is available at: <http://www.fhwa.dot.gov/environment/bikeped/study.htm>

In contrast to the Morris Arboretum and other case studies considered here, The UC Davis Arboretum is in itself a link. It provides a route from the City of Davis and the university residential areas of Aggie Village and Solano Park to the remainder of the UC Davis campus. In fact, when the residential units in Aggie Village were constructed, the university deliberately provided less parking spaces than the City of Davis building code required. “And they actually built it thinking that people would be able to walk along the arboretum or take their bikes”, Burke says, “they really encouraged people to buy there to be people who would do that...knowing they could walk and bike to work.”

Much of the main arboretum pathways have been designated as ‘Regional Bikeways.’ Recently, another bicycle link, the Putah Creek Bicycle Under-crossing was constructed to take cyclists under a railroad and the busy Interstate 80 when traveling from South Davis to the University campus. The City created this link in an effort to remove cyclists from a “terrifying clover leaf” of the Interstate junction as they tried to get from one side of the city to the other. Burke comments “this was not done simply to link the arboretum [to its surrounds]. The arboretum simply terminates down there at the railroad tracks, so we were the beneficiaries of the City of Davis wishing to make this link.” Also at this termination point several of the other City bike routes come together offering access to the old downtown grid. The hub of this area is “a slightly upscale ... college town shopping area, called Davis Commons. And our bike paths [and] our pedestrian paths terminate right there.” From studying the City of Davis bike map it can be seen that close to this activity hub, are also several bike shops and a train station.

Working With Other Bodies and Organizations

Although the arboretum may not yet have considered any narrative nor view the link as an interpretive opportunity they are keen to develop partnerships in an effort to maintain it: “we want to partner with the City of Davis. We’ve been working with the service clubs . . . presenting the idea that perhaps the service clubs of Davis are just the place where we want to emphasize our links to the Town of Davis and the community, that we could build a project that they would help us fundraise, help us field volunteers to actually do the installation, and then help us look for, you know, help us fundraise for long-term operating support for that area.” Being situated within a university campus also creates partnering opportunities out of necessity. Following a new dormitory development on the main university campus, the arboretum is looking at ways to attract these new residents: “we’re right now working with the campus to try to build a formal bikeway that will bring students from these new dormitories and student residences on a path that’s separate from the roadways, to bring them into the arboretum.”

Burke also highlights one of the problems with having to deal with a large organization such as a university. “One of the things that does happen to us is that we’re often blindsided by larger campus initiatives,” Burke points out, “like for instance, right now, they’re . . . surveying for a major road crossing from Interstate 80, across the arboretum. And they’re looking at three locations, and they have surveyors out there with the big equipment going right through our collections, you know, saying, ‘Oh, we can put through right there, or there.’ We have leaky boundaries.” Following a self-assessment process involving the Drucker Foundation, however, communication and cooperation have increased. “(W)e’ve been working with campus planners and administrators and faculty with that Drucker process . . . And so we’re all very much more on the same page,” Burke says.

Working With the Community

Despite there being something of a ‘town and gown’ conflict from time to time, the “arboretum has a very positive relationship with both the City of Davis’ elected officials and, of course, our community, our big, big supporters”, Burke says, “we’re just so happy that we’re the one that everybody likes to talk about.” A feeling of common ownership is encouraged, a vocal group of constituents has been cultivated and this support can sometimes manifest itself in quite dramatic ways. “We kind of have this unpaid security force of little old ladies” which Burke sometimes has to be aware of: “if I’m not wearing my staff t-shirt, and I’m out collecting plants for a class...somebody will...wave an umbrella at me and chase me out.” Burke does consider this commitment a positive thing: “We have a very avid sense of community ownership, which is terrific,” she says.

Summary

Because of its relationship with the University of California, the UC Davis Arboretum is always having to work with other bodies and institutions. The arboretum trails link the dormitories to office and classroom space as well as, through the established city bicycle trails, to downtown Davis and the greater community outside the campus.

CHICAGO BOTANIC GARDEN

From interview with Kris Jarantoski, Executive Vice President and Director

Kris Jarantoski, Executive Vice President and Director of the Chicago Botanic Gardens, in Glencoe, Illinois, points out one of the biggest concerns of incorporating a public trail within the grounds of a major public garden. In an effort to avoid conflicts in use between garden vehicles, bicyclists and pedestrians, The garden is considering ways that a new bicycle trail could be constructed outside the existing boundary, while retaining its close proximity to the main garden entrance.

Abridged Chicago Botanic Garden Interview Matrix				
Creating a link between existing destinations	Becoming a destination			Employing some form of narrative in the interpretation (plant or otherwise)
(or a combination of these two)		Working with other bodies and organizations	Working with the community	
“I’ve heard a lot of people anecdotally say “you know, we went up to the garden” It wasn’t “we just went for a spin”...[It’s] kind of a goal to push you on”	“It’s an attraction in and of itself. People just going on it for a nice bike ride, but the garden is also a destination”	“the Chicago Bicycle Association has been involved as far as doing the bike racks”	“our programming addresses a lot of different audiences”	“there are nice views like of the Japanese garden. ... we figure people can’t miss them”

Table 7

Background

The 385-acre Chicago Botanic Garden (CBG) is owned by the Forest Preserve District of Cook County and operated by the Chicago Horticultural Society. In 1965, the Society created a permanent site for its Botanical Garden at Glencoe, a suburb of Chicago, which opened to the public in 1972. The Garden now attracts around 900,000 visitors per year and has a budget in excess of \$30 million (Chicago Botanic Garden Annual Report, 2003). Entry to the grounds is free although car parking is charged.

The Garden is situated at the northern tip of one of the green conservation corridors which forms part of the 63,000 acres owned by the Forest Preserve District. There is a busy interstate highway to the west, smaller county roads to the north and south and the Glencoe Golf Club to the east.

Creating a Link Between Destinations and/or Becoming a Destination

The North Branch Trail begins on the northern edge of the City of Chicago, where it connects with the Chicago Bikeway System. It meanders in a Northerly direction for approximately 17½ miles “through the northern suburbs and basically, pretty much, ends at the northern part of the garden” says Executive Vice president and Director of the CBG, Kris Jarantoski. “It enters the garden at a south gate and goes along on a road, a service, pedestrian, everything road, on the east side of the garden,” close to the boundary with a public golf course, “and goes all the way to Lake Cook Road” which is where the main entrance and parking lot is located. Approximately half a mile to the east, along Lake Cook Road is the Green Bay Trail, a multi-use trail that goes north to the Wisconsin border. The garden is therefore an integral part of a much larger recreation way system.

Problems, however, are being experienced with this multi-use trail as it passes through the garden, caused by conflicts of interests between the users at busy times. Jarantoski points out that with “all the bicyclists that go through, we have problems with our own vehicles [and] pedestrians; it’s just too much traffic. And it’s too hard to regulate.” There have already been “some altercations between pedestrians and bicyclists” and what is most worrisome is the inevitable accident. One possible solution that CBG has considered to alleviate this problem is that of completely removing the bike trail from the Garden and relocating it outside the garden boundary. As Jarantoski points out, “these people are coming up from the city and they’ve got to

go somewhere.” Relocating the trail to the east, “through a golf course, which is right next to us,” would then bring the bicyclists along the perimeter of the Garden and still allow access to the existing parking lot “where the people who want to...can then enter the garden from the north.”

Despite a decreasing interest in collaborating, the CBG seem to be a popular destination for bicyclists. People seem to use the trail not only “for a nice bike ride, but the garden is also a destination.” Jarantoski has heard many people ‘anecdotally’ remark that they use the botanic garden a “goal to push you to sometimes when you’re riding and you know they have something at the other end.”

Working With Other Bodies and Organizations

Although the gardens do find the trail through their property to be inconvenient, they have still made the effort to partner with the local bicycle association. The Chicagoland Bicycle Association was instrumental in providing bike racks at the garden’s main entrance and Jarantoski believes that these help provide the right message to cyclists, that CBG does “want them to stay and visit.” While acknowledging that the CBG does appear prominently on all of the relevant bicycle maps, Jarantoski remains sanguine in the knowledge that “[t]here’s not a botanic garden fan club in the bicycle club or [any]thing like that.”

There have been other, perhaps, more successful opportunities to partner with the Chicagoland Bicycle Association. Jarantoski, a bicyclist himself, remembers joint events in the past “but I haven’t heard anything about that in a while” he mused “And I guess we haven’t encouraged it that much because I don’t know if we can take a lot more traffic on that road.”

When I spoke to Kris Jarantoski in March, he mentioned that there had been some discussion locally about connecting this end of the North Branch Trail with the

Green Bay Trail to the east, thus avoiding the half mile stretch along Lake Cook Road. “You know, these bicycle people are interested in all bicycle routes and how they hook up, and how they can extend and make connections to have great, incredible bicycle routes.” It was interesting, therefore, to read an article from the Chicagoland Bicycle Federation's electronic news bulletin, with the headline;

\$200,000 EARMARKED FOR TRAIL CONNECTION IN LAKE COUNTY

The article went on to say;

U.S. Representative Mark Steven Kirk has earmarked \$200,000 in this year's federal transportation appropriations bill for the proposed trail connection through the Chicago Botanical Garden in Glencoe between the North Branch Trail and the Green Bay Trail. State legislators also passed legislation providing the Cook County Forest Preserve with bond authority to make capital improvements at the Botanical Garden, including the section of the trail on their property. For more information, please visit <http://www.house.gov/kirk> (Chicagoland Bicycle Federation, 2004)

Jarantoski is clearly correct when he says “obviously they’re interested in the area.”

Working With the Community

Jarantoski does not mention community involvement in the creation of the original bicycle trail but there is some dialogue with residents, as well as the bicycle association, regarding the proposed trail relocation. “And when we talked about taking the bicycle trail around the garden,” he says, “we’ve involved them [ChicagoLand Bicycle Association] also, and the local community, the local suburb of Glencoe and the county. We’re talking with different groups that way.”

As with most botanical institutions, CBG has the usual community outreach “our programming here tries to reach out to a number of diverse different groups. And we don’t, per se, have ‘Hispanic Day’ or ‘African-American Day’ because then, to me, it looks like we have a special day that you should come and the rest of the year we’re

not doing anything.” Jarantoski believes it is more important to “use plants, which have a common denominator with all people, to try to attract all different kinds of people in what we do...So if we have a pepper festival, hopefully all different cultures who use peppers can see how peppers are cool and be involved in that.”

Employing Some Form of Interpretation Narrative

CBG have adopted a policy of no interpretation along the link as it passes through their grounds and have not exploited any of the views that are there. “They’re just there,” Jarantoski says, “and we figure people can’t miss them...there are nice views like of the Japanese garden. When our trial gardens are in bloom, they are beautiful. But there’s no ‘Kodak moment,’ stop here and take a picture.” Interpretive material suitable for a trail which is predominantly for bicyclists is, I would have thought, always going to be a problem but I do wonder how much work has actually gone into this.

On leaving the garden through the south gate, the trail passes through the Skokie Lagoons which were constructed by the Civilian Conservation Core during the 1930s as a flood control project. It is somewhat ironic that a democratic president was responsible for cursing this predominantly Republican area of Chicago with a huge mosquito problem (the Chicago Area Paddling/Fishing Guide). The seven lagoons occupy approximately 190 acres and are situated within 400 acres of floodplain. They are controlled by a series of dykes and dams to maintain the water level close to the ground surface, making it an ideal habitat for marsh species. The lagoon area contains several official picnic sites and parking within 2miles of the CBG south gate. It is not known the extent of the interpretive material available to Skokie Lagoon visitors but what a wonderful opportunity this would be for the local botanic garden, with its extensive expertise, to provide the interpretation for this area.

Summary

For CBG, the trail has been such a success, it is over-crowded and the focus seems to be concentrated more on removing people *from* the trail itself and into the Garden. Because of this, they have not deliberately used narrative nor have they partnered with special interest groups to encourage more people to use the trail. They are, however, working with the local community to investigate the possibility of moving the trail to a safer location, outside the garden

SAN FRANCISCO BOTANICAL GARDEN AT STRYBING ARBORETUM
From interview with Scot Medbury, Director

Golden Gate Park in San Francisco has an established network of paths and trails, designed to guide visitors through the 1,017 acre public open-space. San Francisco Botanical Garden Director, Scot Medbury, is keen to investigate methods of integrating part of that path network more as convenient pedestrian links between the Botanical Garden, the M.H. de Young Memorial Museum and the California Academy of Sciences. Some form of ‘Heritage Trail’ could, perhaps, be implemented through the use of colored or textured surfaces.

Abridged San Francisco Botanical Garden Interview Matrix				
Creating a link between existing destinations	Becoming a destination			Employing some form of narrative in the interpretation (plant or otherwise)
(or a combination of these two)		Working with other bodies and organizations	Working with the community	
“so the links between that garage in particular but also with the museums and our gates are really important to us.”	“some people are here for active recreation purposes, some to visit the cultural institutions”	“I spend a lot of time managing those complex relationships with those non-profits”	“multilingual signage or way finding signage might be the best way”	“signature plantings that pull you along”

Table 8

Background

The San Francisco Botanical Garden at Strybing Arboretum (formerly the Strybing Arboretum and Botanical Gardens) forms an important part of the much larger Golden Gate Park which is situated in the city of San Francisco. Although the 1,000-acre park was created from sand dunes in the 1870s, the Botanical Garden was started in 1926 following a generous bequest from Helene Strybing, in memory of her husband, and opened in 1940. The 55-acre Arboretum and Botanical Gardens is owned by the City and County of San Francisco and administered on its behalf by the San Francisco Recreation and Park Department. The Garden is also operated by the

city, but in cooperation with a non-profit, member-supported partner, the San Francisco Botanical Garden Society. Founded in 1955 (as the Strybing Arboretum Society) by a group of enthusiastic amateur gardeners and professional horticulturists, the Society provides educational programs and supports the botanic garden through fundraising and advocacy. Strybing is open every day. It attracts approximately 500,000 visitors each year and is free of admission charges. The Garden's annual operating budget is \$1.7M; that of the San Francisco Botanical Garden Society is \$2.1M.

Creating a Link Between Destinations and/or Becoming a Destination

Golden Gate Park, being an established public open space, has a comprehensive network of paths throughout its entirety and many of these link conveniently to points of access to the Botanical Garden. The garden's Main Gate is on Martin Luther King, Jr. Drive, which is one city block north of the intersection of 9th Avenue and Lincoln Way, and which is itself one block north of the Metro. Martin Luther King, Jr. Drive swings round in a counter-clockwise arc, describing the northern perimeter of the Botanical Garden. At or around the mid-point of this arc lies the North or Friend Gate and it is the path network that links with this gate that I was particularly interested in.

The Friend Gate is situated opposite the Japanese Tea Garden, "which probably gets the greatest visitation of any of the park attractions, I think something like 650,000 visitors annually" says Botanical Garden Director, Scott Medbury. Next to the Tea Garden is "what they call a music concourse, left over from a World's Fair in 1894." From this area emanates paths which lead to the M.H. de Young Memorial Museum and the California Academy of Sciences. Together, these two institutions are in the midst of approximately \$1/2 billion of new construction. The replacement de

Young building, designed by the noted Swiss Architects Jacques Herzog and Pierre de Meuron, and sheathed in thousands of copper panels, is scheduled to open in the fall of 2005. The new Academy of Sciences facility, designed by Renzo Piano, will employ energy-efficient, environmentally-sensitive building technologies which are said to help set a new standard for sustainable architecture in civic buildings. It will undoubtedly become known for its undulating green roof. Also as part of this re-development is a contentious \$50 million underground parking facility for 800 cars. Scott Medbury points out that “the links between that garage in particular but also with the museums and our gates are really important to us. And so one of the things we’re thinking about is really strengthening those links.” Medbury is the first to point out that this approach is to exploit links “to where people park their car, and how they walk to get to our gates,” but it also provides “links to...the public transportation lines, you know, the bus lines and the streetcars and things of that nature.”

Working With Other Bodies and Organizations

In common with many North American public gardens, The San Francisco Botanical Garden is a hybrid, public/private partnership, but one that is somewhat unique to its circumstances. The San Francisco Botanical Garden Society administers, designs and funds the entire educational program which takes place predominantly within the Botanic Garden. Certain facilities such as the Helen Crocker Russell Library and the Strybing Bookstore have also been provided by the Society and gifted to the city. The Botanic Garden, therefore, works with another body each and every day in the general running of the organization. Specific to the links between it and its neighbors, however, Scot Medbury was more inclined to wait until the de Young and Academy of Sciences development has been completed; “The big chess game right now is who’s paying for what on this garage. And we’re trying to push to get the most

out of it that we can get without having to, you know, pony up any funding.” Once the politics has been settled, the timing may be right to explore developing the links.

Working With the Community

San Francisco is one of the most ethnically diverse cities in North America (U.S. Census Bureau, Census 2000) and in order to address the broader, multicultural audience, several initiatives have been taken by the Botanic Garden. As Medbury so eloquently puts it, “pull a string on my neck and I say, ‘We’re here to welcome and engender ownership in all segments of our community in this garden.’” One such event, ‘Lift-Off at the Conservatory,’ marked an important point in the restoration of the Conservatory of Flowers, which is also directed by Medbury. For this, the Chinese, Russian and Spanish-speaking neighborhoods were targeted through translated flyers and press releases. Unfortunately on the day, the only guides were English-speaking (Medbury, 2002). Despite initial shortcomings, Medbury has learned much from that experience. “I think we can do a lot more, and I think it’s linked to language,” he says, “everybody comes here, but we don’t reach out to them in the same way. It’s largely programming for English speakers. And, you know, the audiences we attract, like so many other botanical gardens in North America are well-educated, Caucasian retirees or something.” This problem has been addressed with the installation of multilingual signage, “we’ve redone the orientation and regulatory sign boards in English, Chinese, and Spanish”, he reports. A public relations consultant with a specialism in ethnic media is also used to help promote events to the diverse communities; “so I think that one way to link is over the airwaves and in the print media.”

The efforts appear to be working. Medbury is keen to point out “a couple of...ethnic groups that have adopted the gardens as their stomping grounds.” The first he mentions is the Russian community which was evident before the Russian revolution and has been added to by “recent immigrant waves.” In Russia, Medbury says, “the park is a place to promenade, dress up and show off your grandchildren... you meet and greet your neighbors and family and friends in the garden, dressed up on Sundays.” Members from the local Russian communities of Richmond District and Sunset, do just this, “[t]hey have specific sort of rendezvous places [where] you know you’re going to bump into folks.” The second group is “mostly Chinese-American users that practice Tai Chi”, Medbury says. “We also have a park position that prohibits active sports within the botanical gardens, but we have a lot of Tai Chi groups that work in here...and as long as it isn’t too huge, it’s okay.”

Employing Some Form of Interpretation Narrative

Medbury has considered methods of attracting visitors from the network of paths within Golden Gate Park through the use of a narrative or interpretive theme. One way might be using “some... iconographic themes, or just through signature plantings that pull you along.” Another method considered is through the layout of the plant collections. Within the botanic garden, they are “arranged by region of geographic origin...and so we’ve sort of jumped the fence with this geographic concept, so that...the perimeter plantings are informed by the adjacent geographic collection inside the fence.” Signage outside the fence might include “broad plaques in the ground that just might say ‘Australia,’ then you walk a little ways, and it’ll say ‘New Zealand’ . And, you know, without really any more interpretation than

that...when you hit the gate, you're already...prepped to understand this sort of geographic collection display concept.”

Another solution might be to adopt a system of colored paving. Medbury remembers seeing a form of tarmac seeding in Europe where different colored stone products are rolled into the tarmac surface before it has fully hardened. He originally envisioned this system within the gardens; “So that we can call out within the garden four primary loops...the twenty minute loop...the thirty-five one, the full hour loop that takes you through most of everything. So that it's really easy for people to find their way about, that they're on the yellow brick road, so the way finding is in part informed by the surfacing of the path, as opposed to...just directional signage or something like that;” but there is no reason why its use could not be extended “to maybe create those links with the museums.”

This idea of cultural linkage can be very attractive and as Richard Benfield points out in his article, ‘Linking gardens, culture and tourism’ (Benfield, 2002), gardens and the arts do appear to fit quite comfortably together. Benfield does, however, go on to reference work carried out by tourism consultant, John Lord, who suggests that more research is required. Lord notes that despite there being demographic parity between those who attend concerts and opera, visit museums, art galleries and gardens, it is yet to be shown whether they are the same people or not. That said, Lord does suggest that suitable cultural partners would include art museums and galleries, with links between gardens and music, and gardens and literature also having potential.

Summary

With the completion of the de Young Museum and Academy of Sciences buildings imminent, Strybing is looking at innovative ways to link with the new

development and share parking facilities and visitors through a 'heritage' trail. The opportunity for some collaborative project with the Renzo Piano building must surely exist. Sustainable architecture, although not featured, would surely sit comfortably within its mission.

THE ARNOLD ARBORETUM OF HARVARD UNIVERSITY
From interview with Richard Schulhof, Deputy Director

Richard Schulhof, Deputy Director of the Arnold Arboretum, in Boston, Massachusetts, acknowledges the access to mass transportation that the Blackwell path, through Bussey Brook Meadow provides. The Arnold Arboretum still relies, to a certain extent, on visitors arriving by car despite having few parking places available. The new path, although entering the Arboretum at a somewhat inconvenient place, allows those wishing to use public transportation a pleasant walk to access those facilities.

Abridged Arnold Arboretum Interview Matrix				
Creating a link between existing destinations	Becoming a destination	Working with other bodies and institutions	Working with the community	Employing some form of narrative in the interpretation (plant or otherwise)
(or a combination of these two)				
“there’s a high school located in such a way that that corridor is the perfect way for them to get to the Arnold Arboretum”	“a lot of people really enjoy being in a seemingly wild environment. And I think that’s the big attraction”	“[the Arboretum Park Conservancy] really have been instrumental in making all of this happen.”	“a number of people plan to...prune back vines, vinery, and poison ivy”	“the intention is to maintain it as an urban wild”

Table 9

Background

The Cambridge Botanic Garden, founded in 1805 was owned by Harvard College and used as a botanical and horticultural teaching resource. Soon after, Boston merchant and farmer, Benjamin Bussey left part of his estate to Harvard to be used as a school of horticulture and agriculture. Then in 1869, a wealthy New Bedford merchant, James Arnold also donated part of his estate for horticultural and agricultural improvements. The Arnold Arboretum was established when, in 1872, the two gifts were combined at the suggestion of George B. Emerson, author of *A Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts* (1846). Charles Sprague Sargent was selected to be the first Director.

Frederick Law Olmsted was commissioned in 1878 to create what became known as the ‘Emerald Necklace,’ the 7 mile long parks and parkway network that runs from the downtown Boston Commons to Franklin Park in Roxbury. Sargent commissioned Olmsted to design the layout of the Arnold and both worked hard to “link the nascent park system and the arboretum in a mutually beneficial relationship” (Punch, 1992). It took a decade of persuasion before the Arboretum became an important element within that elaborate scheme.

In 1882, a lease agreement was forged between the City of Boston and Harvard, where the Arboretum became part of the city parks system and so ‘free and open space for all.’ Harvard maintained responsibility for the plant collections and the city became responsible for the infrastructure such as roadways, perimeter walls and gates. The 265 acre Arboretum is situated in the Jamaica Plain section of Boston and is now administered as an allied institution within the central administration of Harvard University.

The Blackwell Path was created on land that originally started life as an 18-acre plot owned by Harvard University, but outside the 1882 lease agreement, known as The South Street Tract, and 6 acres owned by the Massachusetts Bay Transportation Authority (MBTA) and the City of Boston. The site was described as a “unique environment for the Arboretum because ... unlike other wetlands on the site has not been developed for horticultural purposes. It is an urban wild with diverse habitats including a wet meadow, fresh water marsh, upland oak forest, a ravine and an upland fill site” (Arnold Arboretum master plan, 1993). The land transfer took place in March 1996 where the entire 24 acres came under the lease agreement between Harvard University and the City of Boston.

The Blackwell Path was dedicated in May 2002 and later that year, arboretum staff began clearing weed species from the fill site, to enable the spreading of topsoil

and the planting of new trees. It is planned to create an overlook and Arboretum Director Bob Cook expects many visitors to use the area for recreation.

Creating a Link Between Destinations and/or Becoming a Destination

Due to its close proximity to public transportation, the South Street Tract was recommended for development by the Master Plan of as a secondary entrance to the arboretum. “Part of the intention of making this space a part of the arboretum proper and providing a pedestrian linkage is to link the arboretum to the MBTA, the Boston subway and bus system. And so that’s sort of a welcoming entrance at Washington Street,” Schulhof says. John Blackwell, the driving force behind the creation of the path and founder of the Arboretum Park Conservancy, in a *Boston Globe* article, is quoted as saying, “People will now be prompted to take mass transit to get to the Arboretum. That’s the whole point of doing the pathway.”

The Master Plan did, however, recognize the limitations of introducing visitors at an inconvenient point on the circulation system and so far from the Hunnewell visitor building. That said, Boston suffers from all the usual traffic and parking problems as other major cities and as Schulhof points out, “anything that encourages people to use public transportation is seen as a good thing.” In addition, close proximity to a major public transportation hub must help in attracting a wider audience. Schulhof himself is a regular subway user and he has observed that “the diversity is much greater than what I see on the road, so I’d say anything that connects us to the population using the subway is going to increase diversity of use here at the arboretum.”

Important though a public transportation link is, Schulhof points out that “it’s primarily a community resource.” Users tend to be “dog walkers a lot of folks with their children, birders” he says, “for the most part ... almost exclusively it’s

neighborhood folks that enjoy that area” and not visitors using it to access the MBTA facility.

Working With Other Bodies and Organizations

Being part of the City of Boston park network means that the Arnold Arboretum is obliged to work with various city departments. Schulhof points out that as with any city park there are certain anti-social activities that sometimes take place and “we certainly want to discourage those, because they prevent other people from using the space.” It is therefore necessary to cultivate good working relationships with certain law enforcement agencies, “and we work with the Boston Department of Parks and Recreation and the municipal police to discourage those activities.” Schulhof brings up an important point here: “once you take an open space and make it public, you want to make sure that it gets the kind of patrolling that makes it really inviting, like a welcoming and right place to be for the larger community.” He admits that this was perhaps overlooked in the creation of the link. “You work with the local police department and park rangers to incorporate it as part of their routine. And we’re speaking in the ideal here, and in the ideal, I would love to have ... brought this new space before the rangers and municipal police and the state police and the Boston police (we have four different entities here) and put together some sort of plan for patrolling.”

The Arboretum Park Conservancy (APC) is a not-for-profit citizen group which was set up by John Blackwell and other members of the Boston Natural Areas Network (BNAN) in an effort to ensure the conservation of Bussey Brook Meadow. It took many years of encouragement and fundraising to create the link and ensure the preservation of the area. Schulhof reports that “[t]hey were working on having the Harvard property joined with the city property, and the whole thing made part of the

Arnold Arboretum. They worked on this for ... 15 years easily. And they did fundraising. Public money was involved in the creation of the path. And they secured those public funds, and really have been instrumental in making all of this happen.” In 1994, the APC and the Boston Parks Department successfully applied for a Federal Transportation Enhancement grant and this coupled with matching funding from the State and City, allowed for the design and construction of the footpath to take place. Private donors, foundations and trusts provided the necessary funds for the stone gates at either end to be constructed.

Now that the path has been constructed, between them, the APC and the Arnold Arboretum will work on creating a stewardship plan for the area. The APC were also instrumental in securing a vegetation survey to be conducted, which was carried out by the BNAN. The APC also encourages use of the area, “they put out information what this landscape offers and encourage people to use it.” Schulhof admits that the APC has “been a very positive contributor.”

Working With the Community

Schulhof points out that “most of the people ... that are part of this Park Endowment or Park Conservancy are Boston people, and a good many of them are local [to] Jamaica Plain, Roslindale. So the community was very involved in the transfer and the creation of the new path.” In addition, the APC produced a plan in 1991 showing the proposed location of the path, which they shared with the local Asticou-Martinwood-South Street (AMS) Neighborhood Association. Originally the AMS resisted the creation of the path but after the Massachusetts Highway Authority provided funds for an 8 feet high secure fence between the path and the neighborhood, resistance turned to support. Originally residents were concerned about drug use which was frequent before the area was developed. It would seem that the addition of

the footpath has actually encouraged a decline in illegal activities (Heart of the City Project website).

Community involvement is maintained through volunteer action. “We’re going to have a Community Volunteer Day on June 5,” Schulhof reports. He goes on to say “And I know there’s one woman who’s very, very involved in the creation of the path, who occasionally comes by with her pruner and, you know, nips and tucks in various places”.

Employing Some Form of Interpretation Narrative

The 24-acre site is dominated by a lowland rainwater impoundment which Schulhof calls “fairly pristine.” The smaller upland area, the ‘mesa’ is a “sort of an urban wild in the sense that there are a lot of big mix, sort of a Norway maple-type environment.” During wet spells, Bussey Brook creates a significant wetland area where rainwater is slowly ‘processed’ by seeping into the surrounding ground. Very little in the way of planting has been carried out to date. “[T]he intention is to maintain it as an urban wild. As opposed to a cultivated landscape environment”, Schulhof insists. By encouraging an urban wild ecosystem, it is possible to show “the diversity of wildlife and vegetation that can be sustained on a relatively small piece of land in the middle of the city.” It would appear that “a lot of people really enjoy being in a seemingly wild environment. And I think that’s the big attraction. ...Most of the rest of the arboretum feels fairly tame in comparison.” There has been some talk of incorporating interpretive signage. “I’ve been in a conversation with a non-profit organization ... that has taken on this plot of land in a major way. And in any case, they’re maybe putting out signs this summer calling people’s attention to the bird species and the meadow vegetation.”

Early on in its development, Arnold Arboretum Director, Bob Cook, noted that “the Stony Brook Marsh provides the Arboretum with an invaluable teaching and learning resource for our commitment to science education in Boston schools. It also adds a new dimension to the diverse landscapes of the Arboretum” (Harvard Gazette, 1996). Schulhof reiterates this as an important initiative, “there’s a high school located in such a way that that corridor is the perfect way for them to get to the Arnold Arboretum and they are coming in for field trips ... and I think they got a lot out of the trip. You know, they’re neighborhood high school students. And only a couple of them were even aware that that property was public and open.”

Summary

Overwhelming community commitment has resulted in the obvious success of the Blackwell Path as a link between the Arnold Arboretum and the Forest Hills public transportation hub. Through dogged determination, the APC convinced the Arboretum, the MBTA and the City of the benefits in conserving Bussey Brook Meadow. Today, visitors to the Arboretum, dog walkers, and nature lovers alike, enjoy this urban wild.

CHAPTER SIX HOW IS EACH OF THESE TRAITS ACHIEVED?

In order to further determine the appropriateness of the five isolated traits, three additional organizations were approached as comparative models. Key players from each were questioned in a similar way to which those representing the public gardens and arboreta had been. Their questions, however, were targeted more toward the perceived importance and achievement of the five traits. The following section is a compilation of their explanations and suggestions.

These additional organizations were chosen not only because their links are considered to be successful but because, between them, they exhibit the five traits that emerged from the interview process:

- Creating a link between destinations
- becoming a destination
- working with other bodies or institutions
- working with the community
- employing some form of narrative.

The Cayuga Waterfront Trail Initiative (CWTI) has been highly successful in attracting funding for a community trail through their involvement with the Tompkins County Chamber of Commerce, The Ithaca Sciencenter exploited an obvious narrative to interpret their Carl Sagan Planet Walk through the City of Ithaca, and the Queens Botanical Garden, in Flushing New York, has worked hard on forming a symbiotic and synergistic relationship with its local community. Each is involved in a link that has been used to connect two or more destinations and/or has become a destination in itself.

The Cayuga Waterfront Trail in Ithaca, New York, is a multi-use trail that will link all of Ithaca's main waterfront destinations from Cass Park and the Allan H. Treman State Marine Park on the west of the Inlet to Inlet Island, the Ithaca Farmers' Market, The Newman Municipal Golf Course and Stewart Park to the East. To date two of the six miles are open with phase two programmed for completion in early of 2005 and the final phase projected for some time in the future.

The Cayuga Waterfront Trail Initiative (CWTI), a collaborative organization between the City of Ithaca and the Tompkins County Chamber of Commerce, oversees trail development, with the City owning the land and the Chamber of Commerce administering the fund-raising. CWTI was the recipient of a TrailLink 2003 Rail-Trail Design Recognition Award, co-sponsored by the Rails to Trails Conservancy and the American Society of Landscape Architects. A comprehensive article about the award winners appeared in the June issue of Landscape Architecture magazine.

Rick Manning is the Trail Coordinator for the CWTI and has really been the driving force behind its development. His involvement began in the 1990s when he worked on the Tompkins County Waterfront Plan, under the employ of local Landscape Architects, Trowbridge and Wolf. He formed his own business in 2000, was contracted by the City of Ithaca to conduct a feasibility study for the trail following a foundation grant, and formed a trail advisory board to ensure continued momentum.

Ithaca Sciencenter Sagan Planet Walk, also in Ithaca, New York, is a 1:5,000,000,000 walkable scale model of our solar system that starts with the Sun station, a monolith, in the downtown shopping area and ends with Pluto 1,200 meters (3/4 mile) away at the Sciencenter building. The Sun and Pluto are represented by blue granite monuments and each of the planets by pre-cast concrete monoliths. All were designed by local artist, Erin Caruth. There is a 'Passport to the Solar System'

souvenir guidebook available for purchase (\$2) from downtown retail outlets, as well as the Sciencenter, which provide an interesting interactive element.

The Walk has been the inspiration for other planetary trails around the country, namely the Montshire Museum in Norwich, Vermont and others around the world. A fairly comprehensive list of planetary or solar system walks appears on the Alachua Astronomy Club, in Gainesville, Florida, website.

Bob Orrange was the Project Manager and Chair of the Exhibits Committee at the time and was responsible for guiding the project from its inception through the funding process and ultimately to completion. During the design stage, the well-known astronomer, Carl Sagan, tragically succumbed to a rare bone marrow disease and died. Sagan was a Professor in Cornell's Astronomy Department, had lived in Ithaca much of his adult life and was one of the best known and popular writers of science. His PBS series 'Cosmos' became the most watched series in public-television history and the accompanying book was the best-selling science book ever published in English (Cornell News, 1996). As a way of recognizing his achievements, it was decided to name the trail, the Sagan Planet Walk as a memorial to him.

Queens Botanical Garden – 'East Meets East,' a walking tour of Flushing markets: The Queens Botanical Garden (QBG) is located in what is said to be the most ethnically diverse county in the United States, represented by people of 150 nations speaking over 130 languages and dialects. The QBG works hard at being representative of its community, and the diversity of this community has been the inspiration behind the cultural motto: *to be the place where people, plants and cultures meet*. The Garden grew out of a horticultural exhibit, 'Gardens on Parade' at the 1939 World's Fair and attracted over 2.5 million visitors. The second World's Fair held in New York in 1964 required the QBG to be redesigned and relocated to its present 39 acre site (Queens Botanical Garden website).

Erin Moriarty was Gardener in Residence from June 2000 to July 2002 and developed the idea of a walking tour of Flushing markets with Mira Alperson, an author native to Manhattan. Alperson was in the process of producing a book, 'Ethnic Eats' which looked at local markets and restaurants and who now is responsible for maintaining the on-line newsletter, 'Nosh News'. The tour has been acclaimed by the New York press including the New York Times.

CREATING A LINK BETWEEN DESTINATIONS AND/OR BECOMING A DESTINATION

It can be seen from the case studies, that the trails which have been implemented and those which are planned, can create links between destinations and can become destinations in themselves. For instance, the proposed Wissahickon Trail Link which will pass through the Morris Arboretum, right by their entrance, will join Fairmount Park with Fort Washington State Park but is unlikely to become much of an attraction in and of itself. This contrasts markedly with the Blackwell path which links the Arnold Arboretum with the Forest Hills MBTA public transportation hub. Richard Schulhof reports that the users are predominantly neighborhood people using it to access nature or recreate.

Points to consider when creating a trail

When considering trails, the requirements will differ one to another and to make recommendations here would be foolhardy. Most times, it will be necessary to employ some expert to advise on construction details, widths, grades, costings and so on. It is, however, worth taking into consideration who the users will be. Kris Jarantoski of Chicago Botanic Garden may advocate that it is advisable to provide for different types of user groups to avoid conflicts which might necessitate separated trails. The environment through which the trail will pass may also determine the type of trail used. A route through a riparian corridor which is prone to flooding might be restricted to pedestrian traffic only, along a cleared but un-surfaced path. Conversely, an urban link that reaches out into a community with a high population of senior citizens or young parents, may require a paved surface to ensure that these groups are

not excluded. A detailed explanation of the Americans with Disabilities Act can be accessed at www.access-board.gov²

Because the mission of the public garden involved will invariably include at least some reference to conservation and sustainability, it may be wise to consider the materials that are to be used in any trail project. Sustainable ‘natural’ materials such as crushed stone and gravels are suitable and can be constructed in such a way as to be ADA compliant by dressing the surface with stonedust (typical specification would be: a geotech material over soil with 6" or so of well compacted run of bank gravel and 1-2" of limestone dust compacted with a vibrating plate). Woodchips can work very well in conservation and natural areas but are unlikely to comply with ADA requirements. If a smooth, non-granular surface is required, then the choice is pretty much restricted to asphalt or concrete. Asphalt could certainly be used where a durable, waterproof, easily maintained surface is required, that is unaffected by ice-melting salts. Asphalt is also effective in humid climates where a pavement that will not support the growth of moss or any other destructive vegetation. Conversely, concrete is more suitable in climates where the temperatures regularly exceed 100°F (38°C). Asphalt has the advantage of taking less time to lay per unit area than concrete and can be opened for use sooner because it needs less curing time. These certainly point to some potential financial savings. From the Michigan Asphalt Paving Association website, a comparison between asphalt and concrete showed that asphalt crews placed more than 10 times the pavement surface that a concrete contractor did. The asphalt was placed in 11 nighttime-only shifts, while the concrete work went on around the clock for 12 days. The site also claims that asphalt is America’s most recycled product.

² The 1999 *Accessible Rights-of-Way: A Design Guide* can also be accessed either in html or pdf formats. This publication is currently undergoing review and revised draft guidelines were published in June 2002.

From *Aggregates and Roadbuilding Magazine*, another asphalt/concrete comparison has been made and this time concrete came out on top. In terms of durability, concrete highways have a strong track record in some of the coldest parts of North America. By design, concrete mixes are tailored to specific applications and exposure conditions, ensuring strength and durability, while proper mix design can eliminate potential salt damage to the concrete surface. It is also interesting, if somewhat confusing, to compare the claims made by both camps about the environmental impacts of each product. Both will claim that their material is more recyclable and produce case studies and data to support that position. It is, perhaps, fair to say that both are non-renewable products and both require large amounts of energy to manufacture. It is also fair to say that the products of concrete as it degrades are silica and lime whereas those with asphalt are hydrocarbons.

A further sustainability consideration should be whether the material used is indigenous or not. Often times, the greatest impact a particular material may make on the environment is how far it has been transported from its source to where it is to be used; which can be quite considerable.

Security and policing are other issues which will need to be addressed. Richard Schulhof regrets that no formal plan was ever implemented with the park rangers and the local municipal police authorities to ensure regular and scheduled patrolling of the site. The experiences of Mary Burke at the UC Davis Arboretum, however, illustrate well what security is possible from a dedicated, vocal constituency of individuals with a vested interest in the wellbeing of the trail.

WORKING WITH OTHER BODIES AND ORGANIZATIONS

Why is working with others important?

It can be seen that without the help or at least support from other organizations, the links examined in the previous case studies would either not be developed, or at best, would be more difficult to achieve. Sometimes, as with the Wissahickon Trail Link, the Sagan Planet Walk, and the Cayuga Waterfront Trail, it will be necessary to work with others who own or have an interest in land required for a proposed corridor. Most often this will be the local municipality and a separate section is devoted to working with the City as an example of a government body.

City involvement, however, is not always restricted to land ownership arrangements. Meredith Zelewsky in her article ‘The Morton is Branching Out!’ (Zelewsky, 2004), discusses the partnership forged between the City of Chicago and the Morton Arboretum to promote the “importance of trees in environmentally sustainable landscapes.” One result of such a partnership has been the ‘Gateway Green’ project, where sections of highway entering the City of Chicago are planted with trees to create green corridors. The project also allows the Morton Arboretum to evaluate urban tree and shrub plantings. A similar arrangement exists in Ithaca between the City Forester, the Board of Public Works and the Shade Tree Advisory Committee, chaired by Professor Nina Bassuk, Program Leader in the Urban Horticulture Institute (UHI), at Cornell University. Here, not only is the expertise of the University available to city officials, but the city provides UHI with valuable urban sites for research.

Working in conjunction with others allows a sharing of burdens such as costs, work and fundraising efforts. It also demonstrates support which can help to create to attractive package when seeking funds. Rick Manning of CWTI found this when he

started to partner with the Chamber of Commerce. Another fine example is the theme of Barbara Klaczynska and Tim Tomlinson's article, *The Garden Collaborative: A Model for Innovative Audience Development* (Klaczynska and Tomlinson, 1994). In 1990, following a marketing study and a Pew Charitable Trust grant, the Morris Arboretum launched 'The Garden Passport Project,' which in turn led to "the World's Largest Garden Party" promotion in 1994. Both initiatives promoted the Delaware Valley as the "Premier garden center in North America." The World's Largest Garden Party was named by the American Bus Association as the No.1 U.S. event in 2002 for motorcoach tours.

Partnering also provides each partner the opportunity to access and share contacts, donors and supporters, thus increasing not only the fundraising pool but the potential market also. Richard Benfield congratulates the Des Moines Botanical Center for attracting over a quarter of a million visitors each year through its "diversity of programs with various partners", in his article 'Linking gardens, culture and tourism' (Benfield, 2002). This achievement is quite astonishing when you consider that the population of Des Moines is less than 200,000.

Partnering also increases awareness. Bob Orrange talks about how the fundraising for the Planet Walk was 'kick started' as soon as Carl Sagan's widow, Ann Druyan, offered to pay for the principle monument. Put simply, the more people who are involved, the more people will know about and, hopefully, feel some attachment to the project. Kris Jarantoski also talks about how the Chicagoland Bicycle Federation helped to provide and fit bicycle racks at the Chicago Botanic Garden visitor center.

Throughout my research, various examples of partnering have been discussed, some more successful than others, but most in the context of fundraising and promotion for the public garden as a whole. Two groups that are frequently mentioned

are the community and the Chamber of Commerce and each is discussed separately and in detail below. From my research specifically on corridors, a slightly different set of potential partners seemed to emerge. Each project is different, with different requirements, effecting different people and attracting interest from different groups. As such, I could find no definite trend in which partners to approach nor any order of preference. Consequently, these are shown below in no particular order.

- Societies and special interest groups such as historical and preservation societies, natural history and conservation groups
- Community and neighborhood organizations
- Universities, municipalities and other land holding organizations over which the corridor may pass
- Chamber of Commerce
- Other museums and galleries
- Foundations, donors and corporate sponsors
- Visitor and Convention Bureau and other tourism bodies
- United Way and other charity organizations

Example:

Rick Manning suggests that the more support and involvement a project can receive from credible bodies, the better. After receiving seed money from a local foundation, he approached the Chamber of Commerce as a not-for-profit partner and to gain access to the local business community. “[J]ust the whole mind set of the chamber, ended up being perfect” Manning observes (the Chamber will be addressed

in a later section). An advisory board was assembled from the various local government agencies, businesses and institutions. This group were approached in a very simple way; “we called them and asked them if they wanted to do it”, Manning says, “Give ‘em free lunch and they come.” The board is not only used for their counsel and guidance, but also to access contacts and to receive letters of support which helps to create credibility when seeking funding. From here has emerged a more dedicated fundraising committee.

Another partnership that is being cultivated is with Historic Ithaca and the Ithaca History Center. History of the waterfront has been the main interpretive focus for the Waterfront Trail and such a liaison seems appropriate. “[P]rimarily because there’s so much history on the Waterfront...we wanted them to be players and help us...to learn...about the history and interpret it” Manning points out. Mutually beneficial relationships have emerged between the partners, each with different interest groups, allowing for a cross-fertilization of visitors and users which helps to broaden the appeal of each. “I mean they want to be relevant and not just kind of dusty old institutions”, Manning observes, “Both of them are very activist and engaged and because we have courted them, I think, and done a good job they really want to be a partner with us as well. And...it’s a very mutually beneficial thing because we’re active and alive and we get a whole other type of user than they would in their institutions. It’s a nice opportunity for partnering.” Such relationships also help to further demonstrate community support, both Historic Ithaca and the History Center being community organizations.

Manning is always looking for other partnering possibilities, “We’re sort of reaching out to different institutions that we want to” he says, “recreation, transportation...We’re trying to look at all the ways and angles that we can look at the trail to see how it fits into a bigger picture rather than just the trail itself. Because it’s a

bigger idea than just the trail. It's all about how to enhance that waterfront corridor and maximize its potential." The Cornell Laboratory of Ornithology may be approached to help develop better birding opportunities, for example and Cornell Plantations Natural Areas Program have been approached to help create better wildlife habitats. Another local group Manning has thought about seeking advice from is Sustainable Tompkins, in an effort to develop a sustainable architectural style for waterfront development.

Examples of how to contact these bodies

Locating potential partners should be a relatively easy matter. Most societies, special interest groups, community and neighborhood organizations, museums and galleries can usually be found either through the offices of the local municipality or the public library. Contact information for service clubs, such as Kiwanas, Rotary, Lions and so on can be found on the internet FAQ archives website. Local foundations can often be found through the Human Services Coalition and United Way. The United Way of America website can be used to locate the nearest United Way organization. Other similar bodies will exist locally, as will visitor and convention bureaus and the Chamber of Commerce is often a very good starting point in trying to locate them. Chambers will also invariably have some connection to the state government. The Chamber of Commerce will be dealt with separately but the local office may be found on the national website.

The City

(Interview with H. Matthys Van Cort, Director of Planning and Development, City of Ithaca.)

Each of the trails considered in this report, excepting one, run from the boundary of the public garden out into the broader community and somewhere along their length have to pass over government-owned land. The local government concerned will invariably be the city, village, town, county or even a state owned property. At some stage, also, planning approval will need to be gained and certainly in the eastern states, a city, village, town or township would usually be the municipality that administers such approval.

In the United States, there is a wide variety of forms of governance which often differs from state to state. As a consequence, each municipality will have varying powers, and it is difficult to make general recommendations on how to approach any individual local government with a project or an idea for a project. In the Western states, for example, the land use planning authority tends to be given to the largest municipality, the county. While in the eastern states, it devolves to the smallest jurisdictions, usually cities, villages or towns.

As both the Cayuga Waterfront Trail Initiative and the Sciencenter come under the jurisdiction of Ithaca City Council, the processes involved with the City of Ithaca have been investigated. Although there will be some slight differences, there will also be many similarities with other municipalities, and I feel it will give at least a feeling for what might be involved. Full duties and responsibilities for the various City of Ithaca boards and committees can be found at the City of Ithaca website, clicking on 'Boards and Committees'.

It is important to determine who elected officials, members of appointed ('lay') boards, and city staff are and how they can be contacted. In Ithaca, the city

government can be divided into permanent City staff, mayor and legislature (known as the Common Council), and lay, appointed, board members³. Of greatest importance in this study concerning trails, are: the Planning and Development Board; the Planning Committee; Neighborhoods and Economic Development Committee of Common Council; the Board of Public Works; and the Bicycle Pedestrian Advisory Council.

Before either elected officials, board members or staff are approached it is a good idea to have at least some form of concept plan, case-statement or promotional brochure; the more visually attractive, the better. Also, it can be useful to demonstrate some benefit to the local community or neighborhood, perhaps as part of a feasibility study. It should, perhaps, be pointed out that a feasibility study is not required by law.

A good strategy may be to target each involved staff member, committee chair or board member and try to convince each that the project is something that the Council would wish to support. The more money that is required or the more controversial the project, the higher up the political food-chain one must set one's sights. It is more than likely that public or botanical gardens would already have some relationship with its local municipality. Also, most often being considered a local asset and a 'good' neighbor, puts gardens at a distinct advantage over others seeking approval or funding.

Rick Manning, of CWTI had gained much experience working with city officials prior to instigation of the trail. He knew whom to approach and how the local political system functioned so could, to a certain extent, guide the process. Similarly, Sciencenter Director, Charlie Trautmann, is well-connected within the local political system and, again, was well aware of whom to contact and how to play that system to

³ There are basically two kinds of lay boards, those that are advisory only, and those that have various kinds of authority to act. Usually their actions are of an adjudicatory nature, such as, the approval of subdivisions, site plans, zoning variances, or certificates of appropriateness for work on historic properties. A few, like the Board of Public Works have greater powers and can enter into contracts or expend money from a budget approved by the Common Council.

the best advantage. Consultants are well-acquainted with both government staff members and elected officials, and are well-versed with the intricacies of local planning law. Their job is to guide a project through the planning process, by knowing whom to contact, how and when.

It is oftentimes shrewd to get a project onto a committee or board meeting agenda, by contacting the appropriate staff members, early in its concept stage. Support is always much easier to gain if it can be shown that there is a net social and community gain without any obvious costs attached. Once initial support has been secured, such support can be used to influence whomever has fiscal control when or if the project comes back for financial support from the municipality.

If one wished to seek support for a major trail project that included the use of City land, before an application is made for a Federal Transportation Equity Act for the 21st Century (TEA 21 or STEA03) grant, the promise of matching funding is necessary from the local municipality. An example of a sequence of events in Ithaca might be as follows. The applicant would present the project to the chairs, and/or other members, of the Planning and Development Board, the Planning, Neighborhoods and Economic Development Committee, the Board of Public Works, the Bicycle Pedestrian Advisory Council, the Director of Planning and Development, the City Administration Committee and the Mayor, to seek approval for the concept and garner support. The project would appear on the agendas for these various committees and boards and be discussed. Assuming that overall support was achieved, a resolution would be placed before the Common Council, setting out exactly how the funding would be matched, either financial or by in-kind contributions, and voted upon. It should be pointed out that this process may involve numerous iterations. If successful, the applicant would then be able to seek Federal funding.

Rick Manning of CWTI, highlights two main grant sources available for parks and trails: on the Federal level there is (TEA 21) and at the State level (in New York State) there are the State Bond Act and the Environmental Protection Fund. Full details of available grants can sometimes be accessed through the local municipality, most likely, the Planning Department. Other funding opportunities can be found at The Catalog of Domestic Federal Assistance and the Grant Community websites.

If successful in securing a Federal grant, the project would be presented before the Parks Commission for general comments and concept approval. The Parks Commission would make their recommendations to the Board of Public Works, if City land is involved. The proposal would then be taken to the Planning and Development Board for Site Plan Review. The project would then be passed to the Planning, Neighborhoods and Economic Development Committee for a recommendation to Common Council. Finally, the proposals with all prior comments and actions would be referred to Common Council for, it is hoped, final approval. In Ithaca, as in other cities, towns, and villages in New York State that require Site Plan Review, such a review automatically triggers an environmental review under the State Environmental Quality Review Act (SEQRA). In New York State this review is a tiered, three-stage process, beginning with the completion of a Short Environmental Assessment Form (SEAF), Full Environmental Assessment Form (FEAF) and Environmental Impact Statement (EIS) for projects likely to result in significant environmental impacts. The process can be terminated after completion of any of these documents upon a determination by the agency conducting the review (the Lead Agency) that the proposal will not have a significant impact on the environment. If the Lead Agency determines, on the other hand, that the proposed action will or might have a significant impact, the investigation continues to the next stage.

Another action that might be necessary for the completion of a project is the acquisition of land by the government through eminent domain. Eminent domain is the power of government agencies to compulsorily purchase private property as long as the owner is paid 'just compensation'. This is a power that is written into the US Constitution. 'Just compensation' has been interpreted by the courts as being fair market value. There are several tools used to determine fair market value: the market approach, the income approach and the cost approach. The Fifth Amendment further states that property so acquired must be for 'public use'. In test cases, the term 'public use' has been interpreted more broadly by the judiciary, and a project simply need show some public benefit. For example, the Courts have determined that 'elimination of blight through development projects' satisfies the 'public use' requirement of the Federal Constitution. In actuality, many Government agencies are loath to use the power of eminent domain unless absolutely necessary. But again, this will vary from State to State and municipality to municipality. For instance, the State of New York has so far been unwilling to use the power of eminent domain to acquire a critical 600 feet section of right-of-way over private property to enable construction of the Black Diamond Trail from Taughannock State Park to Cass Park. Luckily it appears that the Town of Ithaca may be willing to pick up the mantle.

The Chamber of Commerce

(Following a discussion with Jean McPheeters, President, Tompkins County Chamber of Commerce.)

It is assumed that by far the majority of public and botanical gardens will already be members of their local chamber of commerce. Most regions of the United States are represented by a chamber of commerce. To determine the location of the appropriate chamber, the national website should be consulted. Although each will have a different mission, vision and operational methodology, as with municipalities, there will be very many similarities. Along with trade organizations, chambers of commerce are considered 501(c)6 for tax purposes. This means that while not being liable for income tax they are liable for sales and property taxes. Many chambers, however, do have foundations attached with full 501(c)3 status. As public and botanical gardens, in the main, will already enjoy 501(c)3 tax exemption, few will benefit directly from this attachment as the Cayuga Waterfront Trail Initiative has. It does, however, mean that any matching funding sought from the community, through the Chamber, will be tax exempt.

For ease of contact and because of local appropriateness, the Tompkins County Chamber of Commerce was studied in his report. The benefits of membership and involvement in a project were examined as was the accessibility of the organization. Tompkins County Chamber ranks among the top chambers in the nation, with a three-star accreditation from the United States Chamber of Commerce. Not all chambers will be able to boast as progressive, forward-thinking and cohesive a board and staff but each should be worth approaching for a variety of reasons, not least of which will be availability to an established and structured network of local business people. The Tompkins County Chamber is funded through a 5% local room tax or tourism fund, collected by each establishment within the County offering accommodation. Of this,

40% is used to fund the arts and beautification and capital development projects that support tourism.

If approaching a Chamber for the first time, in common with local government, it is wise to first carry out some groundwork by at least investigating the mission and the key members of the board. This information can quite easily be acquired from the local chamber office. Most chambers will produce a directory of membership, a newsletter and brochure or leaflet that discusses the mission and/or vision.

The Tompkins County Chamber mission is as follows:

The mission of The Tompkins County Chamber of Commerce is to advocate for the free enterprise system and sound economic development, foster success for its for-profit and not-for-profit members, and promote a high quality of life for all Tompkins County residents.

The aims of its vision are grouped under five headings as follows:

Workforce Development – promoting the attraction, creation and retention of a skilled workforce.

Economic Development – attracting business to the area and promoting the development of the necessary support infrastructure.

Tourism Development – contracting with the county government to operate the Convention and Visitors Bureau.

Local, State and Federal Government – providing access to the various levels of government.

Quality of Life – promoting a high quality of life for local residents.

Many chambers will have similar missions and visions and most are reasonably broad and non-specific. It should accordingly be a relatively easy matter to

reflect that mission into the project for which support is sought. It is always worth demonstrating some real and tangible benefit to the community which usually involves some investigation of that community, to determine its needs and wishes. Many chambers include tourism as part of their mission and it may prove advantageous to show a projected increase in visitors through the project.

In common with many chambers, the Tompkins County board members can be determined from the website. It is worth investing some time in analyzing their role on the chamber board and what their business and other interests are. Those with complementary interests would obviously be approached and presented with an overview of the project. Most chambers will have on their boards, community business people who either represent or are involved with local foundations. Tompkins County Chamber also provides an informal forum for meeting the local business people in an initiative called 'Business After Hours'. This is, to all intents and purposes, a cocktail party that provides the opportunity to network. Each event can be sponsored by any local member organization and used to gain access to the business community and develop a group of allies and potential sponsors.

At the appropriate time, a project would usually be presented to the board and if the necessary footwork has been completed satisfactorily and the project is viewed as being complimentary to the strategic plan of the chamber, it will be approved. Sometimes a feasibility study might be advisable, but at least a well-structured and convincing budget.

State Representatives are able to make Member Item grants of \$10k-50k. They can also be approached for help if seeking Bond Act funds or a Transportation Grant. Again it is wise to at least investigate what committees your State Representative is involved with to determine any potential appeal.

WORKING WITH THE COMMUNITY

Importance of working with the community

Rick Manning has found that without demonstrated community commitment, support from grant and government agencies, for the Cayuga Waterfront Trail, may well have been more difficult to secure. “There’s a lot of smoke and mirrors that goes on in the writing of [grants]” he points out and many grant agencies are inundated with applications where the matching funding sources are “volunteer labor, in-kind contributions.” Manning insists that “cold...cash demonstrates another kind of commitment that’s more powerful.” The Waterfront Trail had a history of community involvement. It had been highlighted as a priority project within the Tompkins County Waterfront Plan, the Local Waterfront Revitalization Plan and the 1997 Ithaca Bicycle Master Plan, so demonstrated nearly twenty years of being in the public record. The processes involved with each of these initiatives included a degree of public participation and Manning states that this certainly helps when approaching potential donors who need to see, “that prior to the funding cycle there was a commitment to the project as opposed to mustering a bunch of support once the grant is announced.”

The Sagan Planet Walk was a new project without any history of community involvement but was to be located within community space. After presenting the idea to the City and gaining their support, Bob Orrange enlisted the help of city officials who “identified for me all of the people in the area I would have to talk to. And it’s a long list.” He stresses that it is important to identify all the neighborhood and other groups from whom help or support is required and brief them fully on the project “and don’t leave any out!” Presentations were also made to schools, neighborhood associations, potential donors and service groups such as Kawanis.

It is important not to underestimate the perception of some people in ‘sniffing out’ insincerity. Community members can be quickly alienated if they perceive that their involvement is nothing more than a paper exercise. Orrange reinforces this and suggests that it is “important also to try and incorporate their advice.” On the Planet Walk, community groups suggested ideas for the monuments and participated in the location and orientation of planet stations. Orrange insists that the most important aspect was to try to “gain as much community support as possible and no objections.” David Mathews, in his booklet ‘For Communities to Work,’ insists that “We are more likely to take responsibility for what we have participated in creating. That requires real engagement — citizens making up their minds by talking to other citizens” (Mathews, 2002).

Example

Since a change in leadership in 1993, the Director, Susan Lacerte, and the board of the Queens Botanical Garden (QBG) have created a mission, vision and strategy plan which are community-focused. The Garden is surrounded by a highly diverse ethnic population and the board has thoroughly investigated strategies to make the garden more accessible to the various cultures represented locally. First, the master planning process included community charrettes where local neighborhood leaders were invited to share their opinions with the design team. This level of involvement has persisted through many aspects of the strategic planning process for the garden.

Cultural advisory committees were formed that included representatives from the various local ethnic groups and provided a forum for discussing a variety of cultural aims and requirements. By encompassing the findings of the cultural community committees, it was found that the garden’s educational and events

programs could be much more focused on the needs of the community. This greater perception of relevance has led to a dramatic increase in attendance.

QBG holds an annual event they call ‘Gardening Day’ which concentrates on a particular cultural group each year. One year, the focus was on Chinese culture and over 2,000 people, more than half of whom were Asian, attended the event. Another year Hispanic culture was addressed and in another, Korean-American, and so on. The preparation for these concentrations, in which the cultural community committees play a vital role, has unearthed some interesting associations. "For one thing, we learned that the peony was important in Chinese culture," Lacerte is quoted in the *New York Newsday*. "It turns out it's the flower of love." (*New York Newsday*, 2001). There is a strong affinity with flower arranging within the Hispanic community and the interest is orchids within the Korean-American population.

When Erin Moriarty, ex Gardener in Residence arrived at QBG in June 2000, this community involvement very much marked the foundation of the garden’s ethos. One of her tasks was to catalogue the local cultural and ethnic diversity through its use of plants in rituals, celebrations, medicine, symbolism and as building materials. This led her rather unsurprisingly to the local markets. Moriarty adds “I think of it as an urban way of looking at plants. We want to reach out to the community, and this is one major way to do it.” Finding much of what was for sale completely alien to her and often somewhat intimidating, Moriarty first tried contacting community members to enlist the help of “whoever was willing to spend time with me.” She felt that as it was she who was wishing to research another community, she needed a ‘guide’ to introduce her to the local neighborhoods.

Her initial contact led to others, “I would find one contact and they would ...lead me to another contact.” This relationship developed over time as Moriarty worked on “trust building.” Part of this process relied upon the fact that community

members appreciated her showing an interest in them. As a result, they became interested in her and her quest to better understand the different uses of plants and their cultures. One of the most important requirements when making contact with such a diverse community, Moriarty suggests, is that you “need to be open,” without any “preconceived notions of what to expect and what the outcomes will be.”

During her trips around the local markets and “community hotspots”, Moriarty “took copious quantities of notes” which enabled her to amass a good body of knowledge. From this she was able to develop programs and tours that were more likely to appeal to those she met on her travels. It also became apparent that the market stall and store owners were interested in receiving visitors from outside the community. From this Moriarty developed the ‘East Meets East’ walking tour of Flushing markets, starting at the Garden and finishing at a local ethnic restaurant.

The benefits, on the whole, Moriarty considered to be social. The majority of those on the tour were from other neighborhoods in Queens who, like Moriarty had been, nervous or uncertain about visiting the area because they knew little about the culture and even less about the items for sale. The tour “broke down many of the cultural barriers and at least initiated a dialogue between people from completely different backgrounds.” The tours were obviously a success because Moriarty would often have repeat visits from people eager to learn more about the culinary and herbal uses of items for sale in the Indian, Chinese and Korean stores visited.

QBG relies upon the usual local press, mailing lists, Church groups, schools and neighborhood associations to maintain contact with both their immediate population and the broader visitor community. Also, because of their somewhat unique location, they will sometimes employ translators for some of their press releases and important notices. Moriarty, however, found “word-of-mouth” to be the best way to keep in contact for her projects. Although such contact tended to be somewhat

unpredictable it enabled her to keep track of seasonal goods for sale as well as the usual staples.

Moriarty suggest that public gardens should “start to consider themselves more as community sites” which reflect, characterize and address the local cultural identity and the needs of that community. “Not everyone is interesting in looking at flowers or attending educational events”, Moriarty reminds us. “Sometimes, especially in urban areas, they simply need somewhere to sit down and relax or read a book.” This is well supported by Dawn Proctor in her article ‘More Gifts for our Gardens’ (Proctor, 1996). In Proctor’s experience, recreation is the main reason people visit her garden in Madison, WI. “Gardens should embrace this reality as a simple and solid base for friendship with the greater community and respect the right of visitors to appreciate gardens on a variety of levels. If gardens are not afraid to define their role as recreational resources, they become interesting to a larger group of people and to those who may have felt incapable of understanding (or would just be bored by) our institutions.” (Proctor, 1996). QBG has no entry fee, so can truly boast being “accessible to all.”

QBG Board member, David Quintas-Parquet criticizes the lack of community initiatives taken by other cultural organizations. "Most mainstream institutions never make the point to reach out to the[ir] communities. But we're saying we have to, for moral as well as economic reasons" (*New York Times*, 2000). Barbara Whitney Carr, President and CEO of the Chicago Horticultural Society and Chicago Botanic Garden, in her article ‘Beyond outreach: A Value Based Model for New Development’ (Carr, 1996, pp 10-11, 43), attests to this moral obligation. “our public gardens belong not to us”, she says, “but to other people, and perhaps most of all to those who have no other garden to connect to, to call their own. We become stewards of treasures too rich not to share.”

Dawn Proctor supports the moral, but highlights the financial importance. She refers to a 1994 survey of major donors conducted by the consultants, Price and Associates, in which they revealed that the most important reason philanthropists make charitable donations, is “to enhance the quality of life in their own communities” (Proctor, 1996). It would seem that the influence an organization has within its community is paramount to major donors when determining its success. Proctor goes on to quote David Mathews of the Kettering Foundation to add weight to her argument. Mathews observes that donors find “organizations that offer innovative ways to solve their community’s social and economic problems” (Proctor, 1996) attractive when determining their charitable giving.

NARRATIVE & INTERPRETATION

Types of Narrative

The two aspects of interpretation narrative that need to be considered are what is the information to be conveyed, (historical, botanical, ecological, etc) and how is it to be presented, using signage, brochures and so on. Both of these offer exciting possibilities for anyone who is creative. Table 10 below shows some ideas that have been used, but some caution needs to be employed. Rick Manning of the CWTI warns that too much interpretation can become monotonous and boring, preferring to restrict information to trail-heads and only a limited number of other sites. The Scottish Natural Heritage in their *Introducing Interpretation* guide, also warn against the over-use of signs “Don’t interpret everything. Some things are best left for people to discover or wonder at for themselves.” Manning also employed the expertise of a graphic designer when producing the interpretive signs, an approach that is supported by Janet Marinelli, in her article ‘Bringing Plant Conservation to Life’ (*Public Garden*, Spring 2001, pp 8-11). If visitors are to be captivated by “spectacular signs”, she says, “it helps to work with not only a graphic designer but also someone who has a way with words.”

Information – what to say?		Presentation – how to say it?
Interpretive/directional/ distance		Signs (pointers, distance markers, interpretation panels)
Social or cultural history		Trail color / surface / planting differentiation
Natural history		Maps, brochures and leaflets - interactive / educational
birds	Plants (botanical, horticultural)	Planting – trail heads / overlooks
water	animals	Audio –guide – selective or indepth

Table 10

Why is Narrative Important?

Narrative is more than simply signage, although that too is an important consideration. The essence of a narrative is that it tells a story and humans love stories. The relationship between mankind and story-telling can be traced back to pre-history. The shaman, storytellers, and elders of tribal groups carried the oral history of their people from generation to generation. These oral traditions were key to the survival and evolution of heritage and cultures (The National Association for Interpretation website)

In *The Interpreter's Guidebook*, Kathleen Regnier, Michael Gross and Ron Zimmerman (Regnier, Gross and Zimmerman, 1994) express the importance of determining a theme. "Every successful interpretive presentation has a theme", they say, "The theme provides the plot for the story." By introducing a narrative, or far more successful, by exploiting a narrative which already exists, trail makers provide an overall theme that not only glues the trail together but also glues the trail to its sources, the garden at one end and the community at the other. I submit that Regnier, Gross and Zimmerman's 'theme' is my 'narrative'.

Narratives can also help to act as guides, a progressive narrative suggests direction and helps lead visitors onward. As Dr Stephen Bitgood is quoted as saying in Ruth Greenhouse and Kathleen Socolofsky's article 'Creating a Visitor-Centered Garden' (*Public Garden*, October 1997), "Discomfort arises when visitors don't know which way to go or cannot understand the overall scheme. Psychological discomfort can also lead to distraction from the interpretive goals of an exhibition center." Once a visitor is engaged and oriented there is often a wish to learn more. This is perhaps why it seems so important to conduct some fair amount of research in an effort to pick a topic or series of topics that trigger interest. As Greenhouse and Socolofsky point out, "exhibits must first attract and hold visitors' attention before they can communicate

successfully” (Greenhouse and Socolofsky, 1997). The National Association for interpretation also addresses the interest of the visitor in its definition: *interpretation is a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource.*

Example: Ithaca Sciencenter

A good example of an interpretive and directional trail is the Sciencenter’s Sagan Planet Walk, in Ithaca New York, which links the Sciencenter building to the Ithaca downtown pedestrian shopping area. This human-scale model of our solar system fits very neatly within its allotted space and at a very acceptable scale. It’s message is that our solar system is vast compared to our Earth, and the planets themselves actually occupy a tiny fragment of the whole. Unlike some other scaled planet trails, it is possible to comfortably walk from one end to the other. As it turned out, the planet stations correspond with “convenient locations” such as the Dewitt Mall (an indoor mall of boutiques and restaurants), the old public library, and city parks.

Although the trail also passes many historic buildings, interpretation along the Sagan Planet Walk is very much centered on the solar system. Each station contains “two images of the planet. It has some descriptive words about the planet. And then it has...hieroglyphs around the side”, Orrange explains. “Now this idea we got from the National Science Foundation...[it] was a good graphic way of making points especially so young people would get them.” This is a good point that Orrange brings up. So often, it seems, interpretive material is so long and wordy that people don’t read it. Scottish Natural Heritage suggest in their web resource *Introducing Interpretation*, that “each piece of interpretation should communicate a single, clear message or idea. This is the main ‘theme’ of your interpretation, and can hook your

visitors into a more detailed story. Layer your interpretation so that everyone gets the message, regardless of how bothered they can be to read/watch/listen to or do the whole thing”(Scottish Natural Heritage). “One thing in the Sciencenter, we don’t use text like you see in museums that nobody can read, because we have young people and we have old people. And so it meant every word was important.” At the same time, the quality of information is important, “the main thing was we wanted to know that what we said was 100% accurate.” Orrange worked for months on the text with Professors Yervant Terzian and Jim Bell from the Cornell University Astronomy Department and the artist, Erin Caruth, in various iterations, back and forth. “Because for one thing we had a limited amount of space, you know, you want to have text that people can read.”

Another way that the narrative is exploited is through the use of an exploratory ‘treasure hunt’ booklet. Visitors are able to purchase a ‘Passport to the Solar System’ at downtown locations and, of course, the Sciencenter. The passports provide the ‘explorer’ with interesting facts about the Sun and each planet “while posing questions to encourage discussion” (Sciencenter website). At each of the stations there is also a passport stamp in the form of a Greek symbol that corresponds to the Sun and each planet. If each stamp is used on the passport and this is relinquished at the Sciencenter, free entry is obtained. By involving the passport, the trail becomes much more interactive.

Yet there is a further level of interpretation that many, perhaps, won’t see, but is there nevertheless and probably helps create a sense of completeness. Each of the planet stations is designed as a monolith or standing stone and as such is somewhat reminiscent of the ancient astronomical and religious monuments of past civilizations. To develop this narrative further, the artist, Erin Caruth, incorporated contemporary carved images on the Sun monument, inspired by ancient hieroglyphs which are designed to “challenge the imagination by beckoning viewers to make connections

between the icon and the solar system” (Sciencenter website). To confirm this further, around the base is carved an extract from the following passage of Carl Sagan’s book, *Cosmos*: “We are the local embodiment of a Cosmos grown to self-awareness. We have begun to contemplate our origins: starstuff pondering the stars; organized assemblages of ten billion billion billion atoms considering the evolution of atoms; tracing the long journey by which, here at last, consciousness arose. Our loyalties are to the species and the planet. We speak for Earth. Our obligation to survive is owed not just to ourselves but also to that Cosmos, ancient and vast, from which we spring.”

CHAPTER SEVEN CONCLUSIONS

Akin to museums, public gardens are under increasing pressure to convey their educational messages and reach an ever increasing population with diverse needs. Unlike most museums, however, public gardens share an anthropological heritage that can be traced throughout history; a history that includes humankind's spiritual, cultural and physical connection with the plant world. This unique human-plant relationship becomes increasingly important as more of the natural world is lost through exploitation, greed and short-sighted development. This link between the plant kingdom and humans not only innate but also vital to understand and at times exploit, is important to acknowledge if public gardens are to retain a place of relevance within society. As Mathew Rosen (Horticulture Manager for the City of Des Moines) points out, "more than a place for plants, the garden is a place for people." (Benfield, 2002). This sentiment is echoed by Barbara Whitney Carr [President and CEO of the Chicago Botanic Garden (CBG)]. CBG has looked at what role the gardens and the plant collections can and should play within the context of the community and the value of such a role. The outcome of this procedure has been the creation of a core strategic mission; "The Garden's collections and professional expertise are dedicated to serving the needs of its community and to improving the quality of life for its citizens. It will be an institution relevant to the lives of our increasingly diverse population. In expressing the human relationship to the natural world, the Garden will not forget its service to humans." (Carr, 1996).

As discussed in this paper, one way that public gardens can connect directly with their community is through the adoption or creation of physical neighborhood links. Such an initiative provides the opportunity for public gardens to prove their relevance and dispel the image of being "elitist organizations available only to those

who can afford to have the education to fully appreciate them.” (Proctor, 1996). From the surveys and interviews I conducted as part of my research, most gardens recognized the importance of trying to engage the local community through their public and educational programming. In addition, the majority of public gardens have well-developed education and/or volunteer programs and a solid technical skill base; and because they are located within an urban or suburban environment, already form part of the urban forestry fabric. Paul Meyer (Director of the Morris Arboretum) suggested that, armed with all this, public gardens are uniquely placed to take an active part in any urban greening or urban forestry initiative (Meyer, 1994).

Charles Little advocated the linking together of regional parks and other public open spaces through the use of linear recreation and conservation links he calls greenways, many of which can follow natural corridors and land forms (Little, 1990). Tom Turner further stressed the need to not only create these ecological and recreational corridors but also to consider their different uses. If the uses of each link were to be matched to the uses of the destinations through which they pass, a more integrated network of useful links could be achieved (Turner, 1995). Like Christopher Alexander, he argued, that where different uses overlap, nodes of activity are created, each of which should correspond to a destination.

My argument in this paper is that these two lines of reasoning should be considered together and developed further, in tandem. If public gardens have the expertise and necessary internal structure to become involved in local urban greening initiatives, is there any reason why such initiatives could not be physically linked to the public garden in question? Further, by creating the opportunity for different uses to overlap at its entrance, the public garden becomes the activity node that Alexander and Turner talk about. Access by motor vehicles generally exists already and this is sometimes supplemented by public transportation; but if separate pedestrian, bicycle

and/or ecological links all come together with the garden being the hub, the opportunity for greater activity is increased.

Gary Watson and George Ware of the Morton Arboretum stressed the importance of plants in general but trees in particular, within the urban environment, to the physical and mental well-being of urban residents (Watson and Ware, 1994). The Morris Arboretum's Bob Gutowski went on to tell us that many communities now recognize their natural resources as an essential element of the urban infrastructure. However, community participation, Gutowski argued, is vital to the success of any urban forestry project (Gutowski, 1994). Furthermore, Gutowski recognized the need for participation to be informed, which would suggest that some element of education is required. I would argue that the presence of physical links in the community, as an integral part of the infrastructure would provide for not only programmatic outreach opportunities but also a very real, physical outreach as well. The same educational messages that public gardens invest much time in developing within their collections can also be employed in such physical outreach links. With physical links, there is the further possibility of reaching more people; perhaps people who are not already garden visitors and affect their lives in a different but equally profound way.

Overall Findings

The initial survey supplied background information which allowed me to select which public gardens I wished to investigate further while also providing a snapshot of how some were addressing their local communities. From the survey results, it was seen that some public gardens were interested in the creation or adoption of physical community links. It was further determined that recreation was the primary use of such links. Following on from the survey, I interviewed five public garden representatives to learn more about the physical link their garden uses to connect to

the community and their experiences with that link. Each garden representative interviewed had their own reasons for developing the links discussed: the Arnold Arboretum to create a link between it and the MBTA (the local transit system); San Francisco Botanical Garden to link with other successful, public institutions; the Morris Arboretum to become a destination within a much larger trail system; the UC Davis Arboretum to provide a safer route from the arboretum to the City of Davis bicycle network; and the Chicago Botanic Garden to relocate bicyclists to outside the garden thus removing a potential hazard. Most recognized that the success of the link would be reflected in an increase in visits and visits can be equated to revenue.

The presence of the five traits which emerged when analyzing the data from surveys and interviews does appear to be integral to the success of links to the community as specified. These traits are:

- creating a link between destinations and/or
- becoming a destination
- working with other bodies or organizations
- working with the community
- employing some form of narrative.

Although the emphasis on the individual traits may have been different in the development of each of the links discussed during the interviews, each appeared to be at least considered in one form or another.

Creating a Link Between Destinations

Tom Turner draws attention to the inadequacy of trails and links that are simply “bland strips of park-land” which “do not lead from an origin to a destination.” For a more effective response, he says, they “should follow desire lines and lines of opportunity, including parks, river valleys and canals.” (Turner, 1995). Paul Meyer of the Morris Arboretum recognized the advantages in creating a link between destinations. Part of the Wissahickon Trail Link will connect two nodes of activity: Fairmount Park and Fort Washinton State Park. He noted that the trail provided an opportunity to link to a broader recreational community that, perhaps, were not already visitors.

Kris Jarantoski of the Chicago Botanic Garden recognized the advantages of the garden being a destination for bicyclists. The bike trail that links CBG with the extensive local trail system provides for just that; “It’s an attraction in and of itself. People just going on it for a nice bike ride, but the garden is also a destination”, he says.

The Blackwell Path which links the Arnold Arboretum to the MBTA hub provides a very useful conduit for arboretum visitors who are reliant upon, or choose to use public transportation. Deputy Director, Richard Schulhof also points out the link’s usefulness to a neighborhood high school that uses it as a convenient point of entry to the collections during organized field trips.

Obviously the use of a trail to link destinations, especially that of a greater trail network or public transportation, increases its chances of success.

Becoming a Destination

Schulhof also highlights how successful the link has been as a resource for the local community. By developing the site as an ‘urban wild’ and demonstrating “the diversity of wildlife and vegetation that can be sustained on a relatively small piece of land in the middle of the city,” a regular group of neighborhood users has been cultivated. This group includes not only those predominantly interested in natural history, but also people who use it simply to recreate or walk their dogs.

Becoming a destination is obviously important but possibly more difficult to achieve; however, with the human desire for recreation and/or communing with nature, not that difficult to strive for.

In the not too distant future, the Cayuga Waterfront Trail will satisfy both of the above traits. At present, it is a destination for individuals and families wishing to walk, run, bike and blade close to the water, but will also provide a link between destinations once the phase to the Farmers’ Market is complete.

Working With Other Bodies and Organizations

Partnering with other organizations will invariably have to happen at some point during the life of a link or trail. All five organizations interviewed agreed that without the assistance of another body, their links would not have been possible. Partnering allows the sharing of costs and fundraising efforts while also providing access to a greater pool of contacts, donors and supporters.

Richard Schulhof of the Arnold Arboretum pointed out the importance of working with other organizations. It was through such a partnership with the Arboretum Park Conservancy that the Bussey Brook project was realized. Similarly, Paul Meyer referred to the Morris Arboretum’s partnership with Montgomery County that has led to the success of the Wissahickon Trail Link. Scot Medbury (Director of

the San Francisco Botanical Garden) is prepared to wait until the moment is right before approaching potential partners within the Golden Gate Park to develop a possible 'Heritage Trail'. Bob Orrange (Project Manager for the Ithaca Sciencenter's Sagan Planet Walk) pointed out the advantage in enlisting help from specialists when developing interpretive material to ensure accuracy and relevance. Orrange was also able to access NASA images through his contacts with the Cornell University Astronomy Department.

Working With the Community

Charles Little highlights several greenways that have benefited from community involvement. The French Broad Greenway in Ashville, the Capital Area Greenway in Raleigh, both in North Carolina, and the Springwater Trail in Portland Oregon are all well-known examples where public participation has helped achieve a community goal (Little, 1990). Mary Burke (Curator of the UC Davis Arboretum), Paul Meyer, Richard Sculhof and Rick Manning all stressed the importance of working with the community to create a supportive, local constituency. The Wissahickon Trail Link Master Plan states that "[w]ithout the educated assistance and support of the local community, conservation and restoration can have only minimal long term impacts." It obviously follows that working with the community as well as working with other bodies (which often include community members) will help to raise the trail's profile within that community. The more people involved with the trail's creation and promotion, the greater the chances are that it will be adopted and used.

Employing Some Form of Interpretation Narrative

The multi-layered interpretation narrative that is employed by the Ithaca Sciencenter for their Sagan Planet Walk provides information to a wide cross-section of visitors. Parents with young children will require different information from high school groups, who will also require different information from amateur astronomers. Scot Medbury mentioned various ways to encourage the movement of visitors, as they made their way through San Francisco's Golden Gate Park, and guide them towards the Botanic Gardens at Strybing Arboretum. Medbury notes that not only could this be achieved through signage but also through plantings plaques and path colors. Whether botanical, zoological, or historical, narrative is important. When successful, it is often what attracts visitors and maintains their interest while guiding them forward.

Further Study

I would have liked to have taken this study further and considered, perhaps, how demographic factors could affect the use of physical links. It would have been interesting, for example, to examine car ownership data within the cities where the public gardens are located. It can be assumed that car ownership within congested cities is lower than adjacent suburbs, suggesting that inner-city residents are more reliant upon public transportation. If this is true, it would be interesting to try to determine how those gardens outside the city which are not close to public transportation are affected. Is there a correlation in such instances between availability of public transportation and visitor numbers? Could visitor numbers be increased by developing links between the public gardens and public transportation? In a broader context, there seems to be little data available to show what effects links can have on visitor numbers. It would also be interesting to monitor use of existing links and try to determine how such use is reflected in garden visits and revenue.

Yet however tempting, the driving force behind the desire to increase visitor numbers should be more than fiscal. Garden managers should feel a moral obligation to be more in tune with the needs and wishes of their communities. Surely the way to achieve this is through participatory, community involvement and by developing a local presence. By failing to jump the fence and move outside their boundaries, public gardens restrict themselves to directly affecting a small select group within their local environs. I would argue that with some imagination in the development of a green infrastructure of trails, links, corridors and ways, botanical institutions can fundamentally affect the lives of many more people.

My hope is that by reviewing the use of physical links by public institutions, and investigating the potential advantages to both the institution concerned and the community at large, more will recognize the importance of providing and maintaining green space for all. Physical links provide the opportunity for public gardens to outreach to their communities not only through programming but through a more direct, visible and recognizable medium.

APPENDIX A
FULL LIST OF CONTACTS

United States

1. Arboretum at Arizona State University – Louisa Ballard, Program Coordinator (Louisa.Ballard@asu.edu)
2. Arboretum at California State University, Fresno – Pete Millier, Director (pete_millier@csufresno.edu)
3. The Arboretum at Penn State – Dr Kim Steiner, Director (Steiner@psu.edu)
4. The Arboretum at the University of California, Santa Cruz – Dan Harder, Director (dkharder@cats.ucsu.edu)
5. Arnold Arboretum – Richard Schulhof, Deputy Director (rschulhof@arnarb.harvard.edu)
6. The Atlanta Botanical Garden – Mary Pat Matheson, Executive Director (mpmatheson@atlantabotanicalgarden.org)
7. Awbury Arboretum and Historic Estate – Gerald Kaufman, Executive Director (awbury@voicenet.com)
8. Beal Botanical Garden, Michigan State University – Dr. Frank Telewski, Curator (telewski@cpp.msu.edu)
9. Bloedel Reserve – Richard Brown, Executive Director (rbrown@bloedelreserve.org)
10. Boyce Thompson Arboretum – Dr. William Feldman, Director (btainfo@ag.arizona.edu)
11. Brooklyn Botanic Gardens – Judy Zuk, Director (judithzuk@bbg.org)
12. Chicago Botanical Garden – Kris Jarantoski, Executive Vice president and Director (kjaranto@chicagobotanic.org)
13. Chicago Park District Conservatories – Lisa Roberts, Director of Conservatories (lisa.roberts@chicagoparkdistrict.com)
14. Cincinnati Zoo and Botanical Garden – Stephen Foltz, Director of Horticulture (stephen.foltz@cincinnati-zoo.org)
15. Cornell Plantations – Don Rakow
16. George Eastman House - Deirdre Cunningham, Landscape Curator (Deirdre@geh.org)
17. Historic Bartram’s Garden – Bill Lefevre, Executive Director (explore@bartramsgarden.org)
18. Holden Arboretum – Charles Tubesing, Chief Horticulturist (tubesing@holdenarb.org)

19. Huntington Botanical Gardens – James Folsom, Director
(drudeen@huntington.org)
20. Huntington Museum of Art – Mike Beck, Interim Director (mbeck@hmoa.org)
21. Indianapolis Museum of Art – Mark Zelonis, Director of Oldfields and Gardens & Grounds (mzelonis@ima-art.org)
22. J C Raulston Arboretum – Robert Lyons, Director (Bob_Lyons@ncsu.edu)
23. Longwood Gardens ?
24. Missouri Botanical Garden – G. Shannon Smith, Director of Horticulture
(shannon.smith@mobot.org)
25. Monticello – Peter Hatch, Director of Gardens and Grounds
(Phatch@monticello.org)
26. Morris Arboretum – Paul Meyer, Director (pmeyer@pobox.upenn.edu), Bob Gutowski, Director of Public Programs (gutowski@pobox.upenn.edu)
27. Morton Arboretum – Kris Bachtell, Director of Collections and Grounds
(kbachtell@mortonarb.org)
28. Mount Auburn Cemetery – Dennis Collins, Curator of Plant Collections
(dcollins@mowntauburn.org)
29. New England Wild Flower Society – David DeKing, Executive Director
(deking@newfs.org)
30. NYBG – Kim Tripp, Senior Vice President for Horticulture and Living Collections (ktrip@nybg.org), Wayne Cahilly, Manager, Institutional Mapping Dept (wcahilly@nybg.org)
31. North Carolina Botanical Garden – Dr. Peter White, Director
(pswhite@email.unc.edu)
32. Planting Fields Arboretum State Historic Park – John Norbeck, Director
(VSimeone@juno.com)
33. Polly Hill Arboretum – Stephen Spongberg, Director
(steve@pollyhillarboretum.org)
34. The Scott Arboretum of Swarthmore College – Claire Sawyers, Director
(csawyer1@swarthmore.edu)
35. The State Botanical Garden of Georgia – Dr. A. J. Lewis, Director
(ajlewis@arches.uga.edu)
36. Strybing Arboretum and Botanical Gardens – Scot Medbury, Director
(scot@strybing.org) , Tony Morosco, Curator
37. U.S Botanic Garden – Holly Shimizu, Executive Director
(Hshimizu@aoc.gov)
38. U.S. National Arboretum – Dr. Thomas Elias, Director

39. UC Davis Arboretum – Kathleen Socolofsky, Director
(arboretum@ucdavis.edu)
40. University of California Botanical Garden – Michael Rimar, Administration Assistant (garden@uclink4.berkeley.edu)
41. Washington Park Arboretum – Dr. John Wott, Director
(wpa@u.washington.edu)
42. Wave Hill - Kate French, Executive Director (info@wavehill.org)

Canada

43. Arboreum, University of Guelph – Professor Alan Watson, Director
(awatson@uoguelph.ca)
44. Montreal Botanic Garden – Michel Labrecque, Curator
(celine_arseneault@ville.montreal.qc.ca)
45. Niagara Parks Botanical Gardens and School of Horticulture – Tom Laviolette, Superintendent (tomlav@niagaraparks.com)
46. Royal Botanical Gardens Ontario – Sharilyn Ingram, Director
(singram@rbg.ca)
47. University of British Columbia Botanic Garden – Douglas Justice,
justice@interchange.ubc.ca
48. VanDusen Botanical Garden - Jill Cherry, Director
(jill_cherry@city.vancouver.bc.ca)
49. Halifax Botanic Garden, Nova Scotia

The rest of the World

50. Christchurch Botanic Gardens, Christchurch, NZ – Jeremy Hawker at Botanic Gardens, Lindsay Morrison, Customer Services Representative
(LeisureandParks@ccc.govt.nz)
51. RBG Sydney – Frank Howarth, Chief Executive
(frank.howarth@rbgsyd.nsw.gov.au)
52. RHS Garden Wisley – Jim Gardiner, Curator
(101765.3214@compuserve.com)
53. Harold Hillier Gardens – Mike Buffin, Curator (mike.buffin@hants.gov.uk)
54. Westonbirt National Arboretum – Hugh Angus, Head of Collections
hugh.angus@forestry.gsi.gov.uk
55. Royal Botanic Gardens Kew – Dr. Nigel Taylor, Curator of Horticulture & Public Education (n.taylor@rbgkew.org.uk) RBG Wakehurst Place – Andy Jackson, Assistant Curator (A.Jackson@kew.org.uk)

56. Royal Botanic Gardens Edinburgh – Dr David Rae, Director of Horticulture
(d.rae@rbge.org.uk)
57. Utrecht University Botanic Gardens, Netherlands – Eric Gouda, Director
(e.j.gouda@bio.uu.nl)
58. Ventnor Botanic Garden – Simon Goodenough, Curator
(simon.goodenough@iow.gov.uk)
59. Kirstenbosch Gardens – Augustine Morkel, Estate Manager,
(amorkel@nbi.ac.za)
60. Cape Flats Nature – George Davis, (Davis@nbi.ac.za)

APPENDIX B

SURVEY AND COVERING LETTER

Dear _____

I am a Graduate Fellow at Cornell University in the College of Agriculture and Life Sciences, studying towards my Masters degree in Public Garden Management. As part of my graduate research, I am investigating the presence and use of physical links between public gardens (or museums) and their local communities. The term 'physical link' in this context should be considered as follows:

Any corridor that enters or adjoins the grounds of the organization and which provides access for the community or has the potential to do so. Examples may include but are not limited to: formal or informal paths; themed or unthemed trails; bike and leisure paths; byways and greenways.

The aim of my research is to produce a report that will provide useful information and a set of guidelines to institutions which may be either considering the development of such links; or which may have access to pre-existing but unexploited links.

Each person asked to complete this survey has been selected because, from information available to me, each is employed by an organization that has, or is, considering such a link. All information collected will be contained in my thesis and may appear in any published article related to my research. The usefulness of my work relies completely upon the quality of data I receive. I would therefore encourage you to be as candid as possible in your replies. Although the bulk of my report will contain aggregated data, selected responses will also be quoted but the anonymity of individuals will be maintained at all times. I would estimate that this survey will take no more than 10 minutes to complete. I may wish to contact you again by telephone, to further discuss your response.

Please answer each question by placing a check-mark (✓) in the appropriate box provided. Please follow specific instructions where shown, otherwise simply answer each question in numerical order and e-mail your response back to me by March 15th.

The survey may also be completed on-line by visiting

http://atcdb.cit.cornell.edu/survey//wsb.dll/dg227/MPS_Survey.htm

Any respondent may request an executive summary of my thesis upon completion, by checking the request box at the end of the survey.

If I have written to you in error and there is a colleague better placed to complete this brief survey, I apologize and request that you simply pass it to them for their attention.

Thank you for your time and patience.

Sincerely,

Duncan Goodwin

Graduate Fellow
Department of Horticulture
Cornell University, Ithaca, NY 14850

Phone: (607) 592-1845

Fax: (607) 255-0187

E-mail: dg227@cornell.edu

http://www.plantations.cornell.edu/education/masters/fellows/2004_goodwin.cfm

1. Does your organization own, manage or have access to any link(s) as described below?
Any corridor that enters or adjoins the grounds of the organization and which provides access for the community or has the potential to do so. Examples may include but are not limited to: formal or informal paths; themed or unthemed trails; bike and leisure paths; byways and greenways.

YES

NO

2. Is any such link (or are any other links) planned for the future?

YES

NO

3. Does the link appear in any landscape or strategic master plan?

YES

NO

Go to Question 5.

4. Was (is) the creation of the link to satisfy a need highlighted by a landscape or strategic master plan?

YES

NO

5. Was your organization involved in the establishment of the link?

YES

NO

6. How is the link (to be) used? (please mark each that applies)

By attracting recreational users such as walkers, joggers, bicyclists, etc

By attracting another specific target group such as bird watchers, amateur botanists, geologists, etc

As a themed trail with some interpretive and/or educational content

As an alternative route to provide access to public transportation or other services

Other (please specify below)

7. Does your organization maintain the link, either fully or partly?

YES fully

YES in Part

NO not at all

8. Where is your organization situated?

Urban area

Suburban area

Rural area

University or College campus

9. How close is your organization to the nearest form of public transportation?

_____ minutes at average walking speed

10. Does your organization's mission actively encourage visitor diversity?
(I refer here to diversity among your local cultural economic, ethnic and social groups)

YES

NO

11. What measures does your organization take to engage with the local community? (please mark each that applies)

Family programs

Workshops

In-community programming

In-school programming

Specifically targeted programs

Other Please specify below

May I call you for a brief telephone interview?

YES

If Yes, please enter your telephone and/or e-mail details here

Best time to call

NO

Please use the space below to include any additional trail or greenway information you feel might be relevant to my research.

If you would like to receive an executive summary of my thesis please check this box

Thank you very much for taking part in this survey. I realize that time is at a premium and sincerely appreciate your help.

THE END

**APPENDIX C
SURVEY RESPONSE SPREADSHEET**

	1. Does your organization own, manage or have access to any link(s)?	2. Is any such link (or are any other links) planned for the future?	3. Does the link appear in any landscape or strategic masterplan?	4. Was (is) the creation of the link to satisfy a need highlighted by a landscape or strategic masterplan?	5. Was your organization involved in the establishment of the link?
1	YES	NO	YES	YES	YES
2	YES	YES	YES	YES	YES
3	YES	YES	YES	YES	YES
4	YES	NO	YES	NO	
5	NO	YES	NO	NO	NO
6	NO	YES	NO	YES	NO
7	YES	NO	YES	NO	NO
8	YES	YES	YES	YES	YES
9	YES	NO	NO		YES
10	YES	YES	YES	YES	YES
11	YES				
12	YES	YES	NO		YES
13	YES	NO	YES	YES	YES
14	YES	YES	YES	NO	YES
15	Yes		Yes	Yes	Yes
16	Yes	Yes	Yes	Yes	Yes
17	Yes	Yes	No		Yes
18	Yes	No	Yes	Yes	Yes
19	Yes	No	No		No

6. How is the link (to be) used?						
	a. By attracting recreational users such as walkers, joggers, bicyclists, etc	b. By attracting another specific target group such as bird watchers, amateur botanists, geologists, etc	c. As a themed trail with some interpretive and/or educational content	e. As an alternative route to provide access to public transportation or other services	d. Other	
1	Yes	No	No	No	No	
2	Yes	No	No	Yes	No	
3	Yes	Yes	No	Yes	No	
4	Yes	Yes	No	Yes	No	
5	Yes	No	No	No	No	
6	Yes	No	No	No	No	
7	Yes	No	No	No	No	
8	Yes	Yes	Yes	Yes	No	
9	Yes	No	No	Yes	Yes	River Corridor provides access for canoe travel as part of the program on a river-watch group.
10	No	No	Yes	No	No	
11	No	No	No	No	No	
12	Yes	No	No	No	No	
13	Yes	Yes	Yes	Yes	No	
14	Yes	Yes	No	Yes	No	
15	Yes	Yes	Yes	Yes	No	Part of our garden is an open park with gardens in it.
16	Yes	Yes	Yes	Yes	No	
17	Yes	Yes	Yes			
18	Yes	Yes			Yes	For use in "field research" by various college professors and students.
19	na	na	na	na	na	

	7. Does your organization maintain the link, either fully or partly?	8. Where is your organization situated?	9. How close to public transportation? (minutes walk)	10. Does your organization's mission actively encourage visitor diversity?
1	YES fully	Suburban area	1	YES
2	YES fully	Urban area	10	YES
3	YES fully	University or College campus	5	YES
4	YES fully	Urban area	3	YES
5	NO not at all	Suburban area	20	NO
6	NO not at all	University or College campus	20	YES
7	YES in Part	Rural area	10	YES
8	YES fully	Suburban area	45	YES
9	YES in Part	Urban area	2	YES
10	YES fully	University or College campus	1	NO
11		University or College campus		
12	YES in Part	Rural area	1	YES
13	YES fully	Urban area	10	YES
14	YES in Part	Urban area	1	YES
15	Yes fully	Urban area	2	Yes
16	Yes in part	Urban area	2	Yes
17	No not at all	Rural area	15	Yes
18	Yes fully	Suburban area	5	Yes
19	No not at all	Suburban area	60	Yes

11. What measures does your organization take to engage with the local community?							
	a. Family programs	b. Workshops	c. In- community programs	e. In-school programs	f. Specifically targeted programs	g. Other	
1	Yes	Yes	Yes	Yes	Yes	No	
2	Yes	Yes	Yes	Yes	Yes	No	
3	No	No	No	No	No	Yes	We are just getting started, so this question does not really apply.
4	Yes	Yes	No	No	No	No	k-8 field trip and summer nature program, mostly from surrounding neighborhood
5	Yes	Yes	Yes	Yes	No	No	
6	No	Yes	No	No	Yes	No	
7	Yes	Yes	No	Yes	No	Yes	Friends membership and Open Days
8	Yes	Yes	Yes	Yes	Yes	No	
9	Yes	Yes	Yes	No	Yes	No	
10	Yes	Yes	Yes	No	No	No	
11	No	No	No	No	No	No	
12	Yes	Yes	No	No	No	No	
13	No	No	No	Yes	No	Yes	public events, locally targeted school field studies
14	Yes	Yes	No	Yes	No	No	
15	Yes	No	No	No	No	No	No
16	No	No	No	Yes	Yes	No	
17	Yes	Yes		Yes	Yes		
18	Yes	Yes	Yes				
19	Yes			Yes			

	May I call you for a brief telephone interview?	When is the best time to call you?	Please use the space below to include any additional trail or greenway information you feel might be relevant to my research.
1	YES	6:30am - 5:00pm	We are trying to move the bicycle trail out of the Botanic Garden because of use conflicts and creating a new entrance for the bike trail
2	YES	by appointment	Check the Montgomery County Planning Commission web site on trails
3	NO		We are in the process of designing and constructing a bicycle/pedestrian trail that traverses the 1.3-mile width of the arboretum, using funds provided by state and local agencies (a ca. \$500K project). The Arboretum at Penn State is 400 acres adjacent t
4	YES		Our mission is in part, to connect an urban community with nature and history. Awbury has open access with no admission fees. Nonetheless, we have had difficulty in breaking down the psychological barrier between a black urban neighborhood and the perception.
5	YES	8-5 pm	I'm not sure if we really qualify. We currently have access limited by gate and fences, but a new rails-to-trails project is currently proposed which runs along the length of the property. With that in mind, I answered your questions.
6	YES	MWF:10-5; T: 8-5 (PST)	Botanical Garden trail access is unrestricted Oct-Mar
7	YES	8.00am	Our links to the outside world, for pedestrians, are the Public Bridleways that pass through the Arboretum. This is apart from the main road in.
8	YES	not sure;	Beginning in 1992 the Thomas Jefferson Foundation undertook the creation of the Thomas Jefferson Parkway to create a linear park along the entrance corridor to Monticello. The Parkway, a \$7 million project funded by private and public monies, helps to lin
9	YES	8:00 - 5:00	We have two informal attachments to the community, one is the Bronx River Corridor used only by Bronx River Restoration, a community organization specifically interested in the health of the Bronx River. The other is a gate to a bridge over the Bronx Rive
10	NO		
11		hard to reach on phone, email best	UC Davis Arboretum is unfenced, 100 acres, and goes right through central campus (for 2 miles). We have 30+ formal and informal entrances to campus roads and paths and many campus neighbors, as well as a formal bikeway connection to the town/region and

	May I call you for a brief telephone interview?	When is the best time to call you?	Please use the space below to include any additional trail or greenway information you feel might be relevant to my research.
12	YES	pot luck I am afraid	
13	YES	beginning or end of day	
14	YES	7:30am Pacific time by appointment	The San Francisco Botanical Garden at Strybing Arboretum is situated on a 55-acre fenced portion of 1,017-acre Golden Gate Park in San Francisco, the second-most densely populated city in North America. A wide range of pedestrian, equestrian, and vehicular circulation routes exist in the Park, and some feed into the two gates into the Botanical Garden and the network of paths and roads therein. We are one block from a streetcar line, and several bus routes pass by or a within 100 feet of the main gates to the Gardens.
15	Yes	Any time	
16	Yes	Who knows, very busy, leave a message	
17	Yes	Between 9 –10am GMT	
18	Yes	Between 9-3 on Monday-Friday	The “link” area I refer to in this survey is the Crum Woods natural area. While the Scott Arboretum has no strategic master plan, Swarthmore College does. The “governing body” for the Crum Woods is the Crum Woods Stewardship Committee, made up of community members, Arboretum staff, college administrators, and faculty members. The Committee has developed a plan for the Crum Woods, and this is the document that the Arboretum uses to guide its maintenance and other decisions.
19	Yes	Morning	

APPENDIX D
INTERVIEW MATRIX

Interview Five-Traits Matrix					
Organization	Working with the community	Working with others bodies and institutions	Employing some form of narrative in the interpretation (plant or otherwise)	Linking existing destinations	Becoming a destination
				(or a combination of these two)	
The Morris	<p>“when we were doing the official plans for this, there was a lot of [community] interest, a lot of debate” (PM line 204)</p> <p>“I think anything that ties something to the community is good for diversity” (251)</p>	<p>“Montgomery County is actually implementing the trail. We’re giving them a means to do it.” (109)</p> <p>“it was really that initiative that did the conceptual plan for this. And that linked in very nicely with the Montgomery County plans” (240)</p>	<p>“We want to use that opportunity to educate our visitors at least in plant identity.” (101)</p> <p>“It’s going to be a carefully-designed pastoral landscape that many people will get to notice on their way through but think just happened that way.” (78)</p>	<p>“You know the Schuylkill Trail gets somewhere between 4 and 500,000 users. ... If we got two percent of them, that’d be 8,000 visitors that we didn’t already have.” (178)</p> <p>“part of our stated intention was to bring more people by our gates... And by linking to broader communities, we might increase our visitors” (254)</p>	

Interview Five-Traits Matrix					
Organization	Working with the community	Working with others bodies and institutions	Employing some form of narrative in the interpretation (plant or otherwise)	Linking existing destinations	Becoming a destination
				(or a combination of these two)	
UC Davis	<p>“we kind of have this unpaid security force of little old ladies” (MB line 286)</p> <p>“most people think it’s their arboretum, and are only dimly aware that there’s a staff, because nobody passes through gates.” (320)</p>	<p>“we’re trying very hard to build partnerships all through the arboretum because it’s so hard to manage otherwise.” (MB line 121)</p> <p>“we’re often blindsided by larger campus initiatives ... we’re not privy to all this work. ... [they] offered to pay to move our trees and so forth. So some weeks we’re lucky to do anything else except for dealing with the campus neighbor issues.” (338-349)</p>	<p>(Due to time constraints, Mary Burk was not asked about the use of narrative)</p> <p>We’re working with the school of education...the city of Davis... the wildlife fishery biology...health sciences... performing arts people. We’re talking with each group – like what could this place really be? And then once we have those programmatic decisions made, and that consensus built, then we want to say...then what should the garden look like?” (389)</p>	<p>“So it’s not exactly a destination ... it’s simply something people encounter, you know, several times possibly as they walk across campus. (79)</p> <p>“so we were the beneficiaries of the city of Davis wishing to make this link” (57)</p>	<p>“some people are moving through pretty fast, and other people are jogging, and some people are there to look at the plants.” (MB line 101)</p>

Interview Five-Traits Matrix					
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				(or a combination of these two)	
Chicago Botanic Garden	<p>“our programming addresses a lot of different audiences” (562)</p> <p>“I think we could do more” (549)</p>	<p>“the Chicago Bicycle Association has been involved as far as doing the bike racks” (353)</p> <p>“we haven’t encouraged it much because I don’t know if we can take a lot more traffic on that road” (254)</p>	<p>“there are nice views like of the Japanese garden. ... we figure people can’t miss them” (416)</p> <p>“we’ve talked about painting different lanes for bikes or pedestrians” (263)</p>	<p>“I’ve heard a lot of people anecdotally say “you know, we went up to the garden” It wasn’t “we just went for a spin”...[It’s] kind of a goal to push you on” (336)</p> <p>“a problem if we start admission, it would suddenly look like a toll put on the bike path” (229)</p>	<p>“It’s an attraction in and of itself. People just going on it for a nice bike ride, but the garden is also a destination” (333)</p> <p>“There’s a lot of bike rack area built into the garden” (201)</p>
The Arnold Arboretum	<p>“community volunteer day” (486)</p> <p>“a number of people plan to work along this path, and prune back vines, vinery, and poison ivy” (495)</p>	<p>“[the Arboretum Park Conservancy] worked on this for... 15 years easily. And they did fundraising. ...They secured those public funds, and really have been instrumental in making all of this happen.” (477)</p>	<p>“the intention is to maintain it as an urban wild” (141)</p> <p>“we’re in the process of revising our [directional] sign system” (334)</p>	<p>“there’s a high school located in such a way that that corridor is the perfect way for them to get to the Arnold Arboretum and they are coming in for field trips.” (374)</p>	<p>“a lot of people really enjoy being in a seemingly wild environment. And I think that’s the big attraction” (453)</p>
				<p>“And what we hoped would occur there, is occurring: a lot of people just quietly enjoying nature or passing through from one point to another.” (359)</p>	

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Strybing	<p>“links to all of those other cultural attractions” (36)</p> <p>“multilingual signage or way finding signage might be the best way” (368)</p> <p>“media outreach”</p> <p>“Russia ... a place to promenade” (396)</p> <p>Chinese-Americans users that practice Tai Chi” (410)</p>	<p>“the links between that garage in particular but also with the museums and our gates are really important to us” (157)</p> <p>“I spend a lot of time managing those complex relationships with those non-profits” (263)</p>	<p>“signature plantings that pull you along” (160)</p> <p>“So the way finding is in part informed by the surfacing of the path, as opposed to...just directional signage” (183)</p> <p>“broad plaques... that when you hit the gate, you’re... prepped”</p>	<p>“so the links between that garage in particular but also with the museums and our gates are really important to us.” (158)</p> <p>“both the sidewalks and the roads link to all manner of transportation links just outside the park.” (43)</p>	<p>“a huge rollerskate thing... and then blading , biking, they have...bike rental places all around the park and stuff” (286)</p> <p>“some people are here for active recreation purposes, some to visit the cultural institutions, others just to leave the city behind, the reason for which the park was built – escape the ills of the city and that sort of thing” (336)</p>

BIBLIOGRAPHY

- Alexander, Christopher, Sara Ishikawa, Murray Silverstein, et al, *A Pattern Language: Towns, Buildings, Construction*, Oxford University Press, New York, NY, 1977.
- American Association of Botanic Gardens and Arboreta (AABGA), *Rooted in Your Community: Chicago 2005*, Annual Conference 'call for sessions' brochure, 2004.
- Arnold Arboretum of Harvard University, Master Plan, Sasaki and Associates, Inc., 1993.
- Benfield, Richard W., 'Linking Gardens, Culture and Tourism,' In *Public Garden*, Vol.17, No.3, Summer 2002.
- Carr, Barbara W., 'Beyond Outreach: A Value Based Model for New Audience Development,' In *Public Garden*, Vol.11, No.3, July 1996.
- Cary, Diane and Kathleen Socolofsky, 'Long-Range Planning for Real World Results Start with Self-Assessment and Audience Research,' In *Public Garden*, Vol.18, No.4, 2003.
- Eberbach, Catherine, 'Urban Forestry? Environmental Education? Public Gardens? Yes!,' In *Public Garden*, Vol.9, No.1, January 1994.
- English, Merle, 'Creating the Avant Garden: Ethnic botanical themes are at root of facility's redesign,' In *New York Newsday*, March 29, 2001
- Federal Highways Administration, National Biking and Walking Study, 1991
- Greenhouse, Ruth and Kathleen Socolofsky, 'Creating a Visitor-Centered Garden,' In *Public Garden*, Vol.12, No.4, October 1997.
- Gutowski, Robert, 'The Basics of Urban and Community Forestry,' In *Public Garden*, Vol.9, No.1, January 1994.
- Hartfield, Regina, 'Community Relations at the New York Botanical Garden: Forging New Relationships,' In *Public Garden*, Vol.10, No.1, January 1995.
- Klaczynska, Barbara and Tim Tomlinson, 'The Garden Collaborative: A Model for Innovative Audience Development,' In *Public Garden*, 1994.
- Little, Charles E., *Greenways for America*, The Johns Hopkins University Press, Baltimore, MD, 1990.
- Marinelli, Janet, 'Bringing Plant Conservation to Life,' In *Public Garden*, Vol.16, No.1, Spring 2001.
- Mathews, David, *For Communities to Work*, Kettering Foundation Press, Dayton, OH, 2002.
- McCabe, Sally, 'Volunteers in Urban Forestry' In *Public Garden*, Vol.9, No.1, January 1994.
- Medbury, Scot, 'Opening Wide the Golden Gate,' In *Public Garden*, Vol.17, No.3, Summer 2002.

- Meyer, Paul W., 'From the Living Collection to the Urban Forest,' In *Public Garden*, Vol.9, No.1, January 1994.
- Morris Arboretum Annual Report, July 2002 – June 2003
- Parsons, Kermit C. and David Schuyler (Eds.), *From Garden City to Green City: The Legacy of Ebenezer Howard*, Johns Hopkins University Press, Baltimore, MA, 2002.
- Proctor, Dawn B., 'More Gifts for our Gardens,' In *Public Garden*, Vol.11, No.3, July 1996.
- Punch, Walter T., 'The Garden Organized: The Public Face of Horticulture,' In Massachusetts Horticultural Society (Eds.), *Keeping Eden: A History of Gardening in America*, Little, Brown and Company, Boston, MA, 1992.
- Quayle, Moura, 'The 21st Century Hybrid Landscape: Long and Winding Arboreta,' In *Public Garden*, Vol.15, No.1, Spring 2000.
- Raver, Anne, 'Human Nature; From Tai Chi to Collard Greens, a Flowering of Diversity,' In *New York Times*, August 31, 2000.
- Regnier, Kathleen, Michael Gross and Ron Zimmerman, *The Interpreter's Guidebook: Techniques for Programs and Presentations*, Interpreters Handbook Series, 3rd Edition, UW-SP Foundation Press, Inc., 1994.
- Rosen, Matthew, 'Building Bridges' In *Public Garden*, Vol.11, No.3, July 1996.
- Rudavsky, Shari, 'Pathway to heavenly Green,' In *The Boston Globe*, May 5, 2002.
- Salant, Priscilla and Don A. Dillman, *How to Conduct Your Own Survey*, John Wiley and Sons, Inc., New York, NY, 1994.
- Spirn, Anne W., *The Granite Garden: Urban Nature and Human Design*, Basic Books, New York, NY, 1984.
- Turner, T., 'Greenways, blueways, skyways and other ways to a better London,' In *Landscape and Urban Planning*, Vol. 33, 1995.
- Watson, Gary and George Ware, 'What Botanical Gardens Can Contribute to Urban Forestry Research,' In *Public Garden*, Vol.9, No.1, January 1994.
- The Wissahickon Riparian Restoration Trail Link Master Plan, Feasibility Study and Master Plan, Andropogon Associates, Ltd., 1998.
- Zelewsky, Meredith, 'The Morton is Branching Out!', In *AABGA Newsletter*, No.350, May 2004.

WEB RESOURCES

Aggregates and Roadbuilding Magazine: www.rocktoroad.com

Alachua Astronomy Club, Inc., in Gainesville, Florida:
www.floridastars.org/sswalk.html

American Association of Botanic Gardens and Arboreta:
<http://list.msu.edu/archives/aabgacol.html>

The Catalog of Domestic Federal Assistance: www.cfda.gov/public/faprs.htm

Chicago Area Paddling/Fishing Guide:
Chicagoland Bicycle Federation's electronic news bulletin, Issue #5, February 13, 2004: www.biketraffic.org/content.php?id=78_0_17_0

City of Davis, California: www.city.davis.ca.us

City of Ithaca, New York: www.cityofithaca.org

Cornell News, December 20th 1996:
www.news.cornell.edu/general/Dec96/saganobit.ltb.html

Federal Highways Authority: www.fhwa.dot.gov/tea21/

The Grant Community: www.grantcommunity.com

Hampshire County Council Census 2001: www.hants.gov.uk/census/

Heart of the City Project, Center for Urban and Regional Policy, Northeastern University: <http://ksgaccman.harvard.edu/hotc/index.htm>

Internet FAQ archives: www.faqs.org/faqs/service-clubs/general-faq/preamble.html.

Kettering Foundation: www.kettering.org

Longwood Graduate : www.udel.edu/LongwoodGrad/HomePage.htm

Michigan Asphalt Paving Association: www.miasphalt.com

National Association for Interpretation: www.interpnet.com/

Queens Botanical Garden: <http://www.queensbotanical.org/>

Sciencenter: www.sciencenter.org

Scottish Natural Heritage, *Introducing Interpretation*: www.snh.org.uk/

The United Way of America: <http://national.unitedway.org>

Tompkins County Chamber of Commerce: www.tompkinschamber.org.bofd.htm

U.S. Census Bureau: <http://quickfacts.census.gov/qfd/index.html>

U.S. Chamber of Commerce: www.uschamber.com/default.

Wissahickon Green Ribbon Trail: www.montcopa.org/parks/wissahickon.htm

Wissahickon Valley Watershed Association: www.wvwa.org/

FURTHER READING

- Fisher, I. D., (1986) *Frederick Law Olmsted and the City Planning Movement in the United States*, University of Michigan Research Press, Ann Arbor, Michigan.
- Flink, Charles., 'Greenways: Recreational resource versus land use ethic,' In Proceedings, Third Biennial International Linear parks Conference, Ashville, N.C., September 1989.
- Forman, R. T. T., and J. Baudry, Hedgerows and hedgerow networks in landscape ecology, *Environmental Management* 8: 495-510, 1984.
- *Landscape Ecology*, John Wiley and Sons, New York, 1986.
- Haffner, Edward, (2001) *The Future of the American Parkways*.
- Howard, Ebenezer., (1902) *Garden Cities of Tomorrow* (Originally printed as *To-Morrow: A peaceful Path to Real reform*, 1898), Swan Sonnenschein and Co., London.
- Lewis, P. H., Jr, Quality corridors for Wisconsin, *Landscape Architecture*, 54 (2): 100-107, 1964.
- MacKaye, Benton., (1928) *The New Exploration: A Philosophy of Regional Planning*, Harcourt, Brace, New York.
- Manning, Richard J., (1988) *Nature in the City: The Creation of Nature-Like Landscapes in European Parks and Residential Openspaces*, (Originally presented to the Faculty of the College of Agriculture and Life Sciences, Cornell University, for the Degree of Master of Landscape Architecture).
- McHarg, Ian L., (1969) *Design with Nature*, Doubleday/Natural History Press, Garden City, New York.
- Smith, Daniel S., and Paul C. Hellmund (Eds), (1993) *Ecology of Greenways: Design and Function of Linear Conservation Areas*, University of Minnesota Press, Minneapolis.
- Tompkins County Greenway Coalition, (1995) *Building Greenways for Tompkins County An Action Plan*, Tompkins County Greenway Coalition, Ithaca New York.
- Turner, Tom, (1991) *Towards A Green Strategy for London – Strategic Open Space and Green Chains* (Summary of a report presented to the London Planning Advisory Committee in May 1991).
- Whyte, William F., (1984) *Learning from the Field: A Guide From Experience*, Sage Publications, Inc, Beverly Hills, CA.
- Whyte, William H., (1968), *The Last Landscape*, Doubleday and Company, Inc., Garden City, NY.
- Zaitzevsky, Cynthia R., (1982) *Frederick Law Olmsted and the Boston Park System*, The Belknap Press of Harvard University Press, Cambridge.