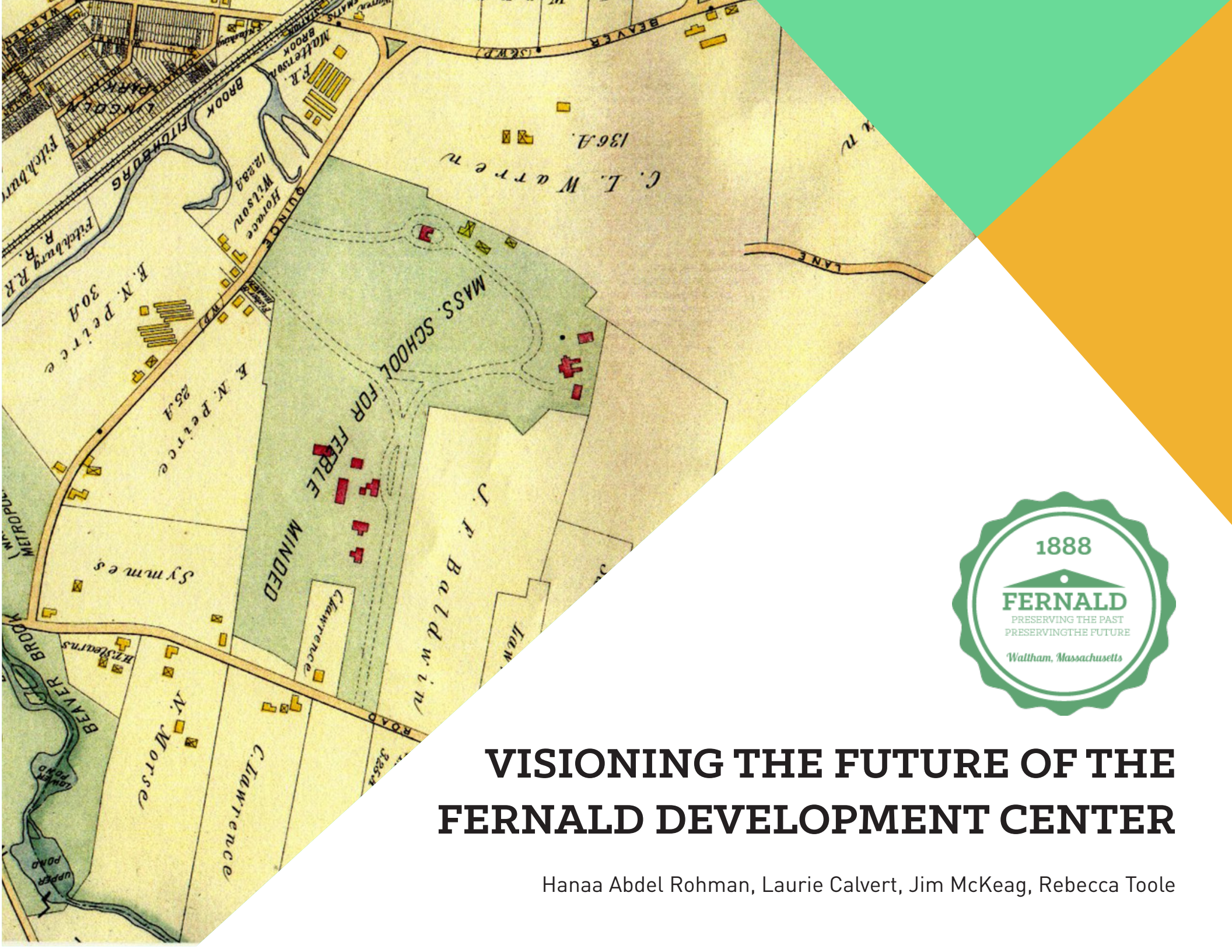


1888

FERNALD

PRESERVING THE PAST

PRESERVINGTHE FUTURE

Waltham, Massachusetts

VISIONING THE FUTURE OF THE FERNALD DEVELOPMENT CENTER

Hanaa Abdel Rohman, Laurie Calvert, Jim McKeag, Rebecca Toole

VISIONING THE FUTURE OF THE FERNALD DEVELOPMENT CENTER

TUFTS UNIVERSITY
DEPARTMENT OF URBAN AND ENVIRONMENTAL POLICY AND PLANNING
FIELD PROJECTS, MAY 2014

Hanaa Abdel Rohman, Laurie Calvert, Jim McKeag, Rebecca Toole

Tufts UNIVERSITY

ACKNOWLEDGEMENTS

The team would like to thank Professor Justin Hollander and Teaching Assistant Jingyu Tu for their guidance, encouragement and insight throughout this process. We extend our gratitude to the entire Fernald Working Group for their knowledge transfer, and trust in our efforts to prepare this analysis for them. Finally, we thank the various stakeholders for their time and opinions through the interview process.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ABSTRACT

This study seeks to identify the common issues in repurposing and developing large institutional sites that have outlived their original purpose and to apply these findings to the potential reuse of the Fernald Developmental Center in Waltham, Massachusetts. This project was conceived as a partnership between a citizen-led coalition, the Fernald Working Group, and a team of Tufts University graduate students. The study includes a meta-analysis of similar New England sites that provides a comparative analytical framework as well as limited surveys and interviews that provide an understanding of the interests and values of community stakeholders. We find that the parallel processes of development and decline of these sites in relation to the growth of urban areas often present physical and logistical challenges for a timely and inclusive reuse process. We also find that citizen-led groups can influence the reuse process but need to be sensitive about how they negotiate their authority within established procedures. We recommend some strategies and approaches that may improve the chances of a positive and collaborative reuse process.

EXECUTIVE SUMMARY

The Fernald Developmental Center (Fernald) was established in Boston in 1848 and moved to Waltham, Massachusetts in 1888. It is the oldest facility dedicated to the treatment of the developmentally disabled in the Western Hemisphere (Daly 2014) and is among the last remaining state-run care facilities for the mentally ill in the state. With a sprawling campus of more than 70 buildings on approximately 200 acres of land, Fernald represents the evolution of state care facilities since the lavish and massive state hospitals[1] of the Victorian era fell from popularity in favor of a model based on custodial care (Yanni 2007). These facilities developed in relative isolation from the communities that surrounded them and yet they were at the mercy of the same economic, social and political forces. In 2003, when then Governor Mitt Romney declared his intention to close Fernald (T&G 2003), the state hospital and county sanatorium directly to the north and northwest had already been shuttered and sold and were in the process of being redeveloped. These processes were lengthy, cumbersome, and often rancorous (Burghdoff 1994), and some members of the community were not satisfied that the outcomes met their expectations or satisfied the interests of the community .

The following year, the Fernald Working Group (FWG) was formed as a coalition of community groups, non profit agencies, and private citizens. They coalesced around a shared vision rooted in the values of sustainable development and advocated for a community-based approach for the future development of the Fernald Developmental Center. After articulating a vision in 2009, FWG continued to reach out to community members until in 2013 they felt it necessary to identify and develop specific projects for which they believed there was general consensus and had the potential to move the planning and reuse process forward.

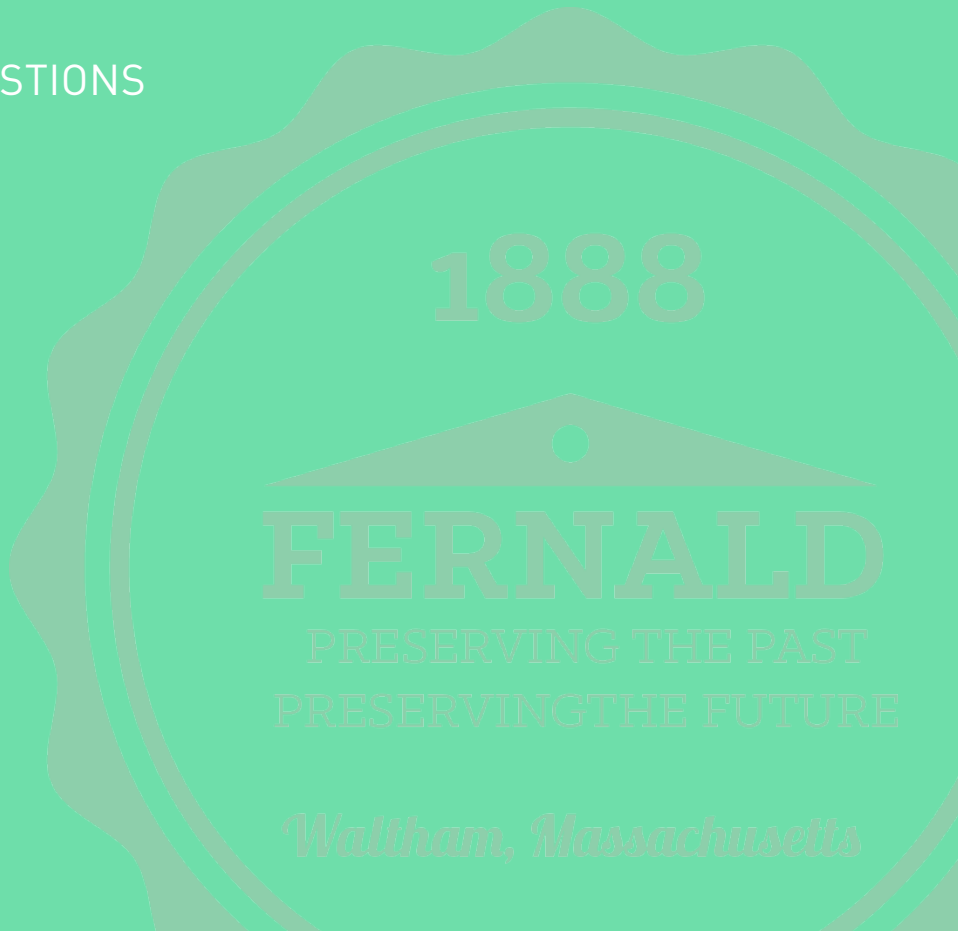
This project is the result of a partnership with the FWG and a graduate student research team from Tufts University's Department of Urban and Environmental Policy and Planning (UEP) and grew out of FWG's desire to better understand and influence the planning process as it pertains to Fernald. The goal of this research is to understand common issues in repurposing large institutional sites as well as identify stakeholder interests and values as it relates to the redevelopment of the Fernald site.
Our team performed a meta-analysis comparing similar sites in the New England region, conducted a survey of the Fernald Working Group members, and held interviews with community stakeholders. A review of academic literature as well as

[1] The distinction between state hospitals, state schools and state sanatoriums deserves clarification. State hospitals were primarily established for the care and treatment of the mentally ill, state schools for the education and care of the developmentally disabled, and sanatoriums for sufferers of tuberculosis. Other state institutions included almshouses, workhouses and farms, and institutions for the criminally insane. This report makes no attempt to to explore the differences between these classes of patients or facilities, but as the literature on the reuse of these sites is primarily concerned with state hospitals, that term will often be used in this report as a stand-in to describe all such facilities.

material provided by our client and various municipal and state agencies also informed our methods and results. Our findings established a typology of similar sites using criteria including the length of the disposition and reuse processes, the difficulties of repurposing the often enormous amount of space at large institutions, the challenges of site contamination, and lingering negative public perception. In addition, the survey and interviews revealed broad areas of consensus around open space and related issues, low-impact for surrounding neighborhoods and the preservation of historic resources. The team's research and recommendations are grounded in FWG's stated goals and in consideration of stakeholder interests and values.

We conclude that citizen groups like the FWG can play a significant role in shaping the planning process for complex land use issues and can help create positive outcomes for local communities. We also conclude that such groups cannot assume authority in the planning process, but must take special care to engage a broad base of support and build relationships among established decision makers and authorities if they are to avoid the perception of representing narrow interests and positions. We recommend some strategies and processes that we feel can help mitigate these perceptions and help enhance the planning process based on established methods.

1. INTRODUCTION



OVERVIEW

Within the densely populated and heavily developed Route 128 corridor of the Boston metropolitan area is 176 acres (DCAMM 2011) of underutilized land with an uncertain future. The Fernald Developmental Center occupies this parcel of land and presents a rare opportunity for the surrounding community in the City of Waltham, Massachusetts: a chance to absorb a significant parcel of land and transform it into a new community asset while preserving its historic resources and negotiating a fair and transparent public process.

The Fernald Developmental Center, a Commonwealth of Massachusetts owned and managed care facility and school for developmentally disabled individuals, is located in northeast Waltham. The Commonwealth seeks to surplus and transfer its few remaining state mental hospital properties, which includes Fernald. After ten years of state agency decision making, Waltham is well positioned to acquire Fernald through the Commonwealth disposition regulatory process coupled with pending legislation. The potential transfer of the land to the City of Waltham would allow the city to develop the Fernald parcel according to its own prerogatives and desires and thus presents an opportunity for an innovative and collaborative planning process.

Our client, the Fernald Working Group (FWG), is a coalition of community organizations and residents who collectively share a deep belief that Fernald should be developed in an environmentally and economically efficient manner with long-lasting benefits to the greater Waltham community (Fernald Working Group 2014). Our role is to consider the academic literature pertaining to the redevelopment of similar sites, to understand the interests of community stakeholders and to examine the planning processes that allow for participative community involvement. Our analysis and findings are intended to guide FWG as it seeks to build community acceptance of its vision and to strengthen relationships within the broader Waltham and regional communities. This section provides an overview of the City of Waltham, a description of the Fernald Developmental Center, an introduction to our involvement with the project, and an outline of the overall report structure.

COMMUNITY PROFILE

Waltham is a city of 13.6 square miles located inside the Route 128 beltway that defines Boston's inner loop (Figure 1). Waltham was officially separated from Watertown in 1738 and was incorporated as a city in 1884. The city's industrial history is rooted in textiles and watch manufacturing that developed along the Charles River, but was also home to a robust farming community and several large summer estates of prominent Boston merchants and industrialists. These farms and estates provided much of the land on which the state institutions along Trapelo Road in North Waltham, including Fernald, were located (Petersen and Murphy, 1988).

In more recent times, Waltham has established itself as a base for corporate office space in an area close to three major freeways (Route 128, Interstate 90, and Route 2, see Figure 1). The city is separated into roughly two major regions: the urbanized south that developed around the manufacturing centers on the Charles River and the neighborhoods of predominantly single-family homes and rolling hills to the north. Waltham is nestled between these routes and

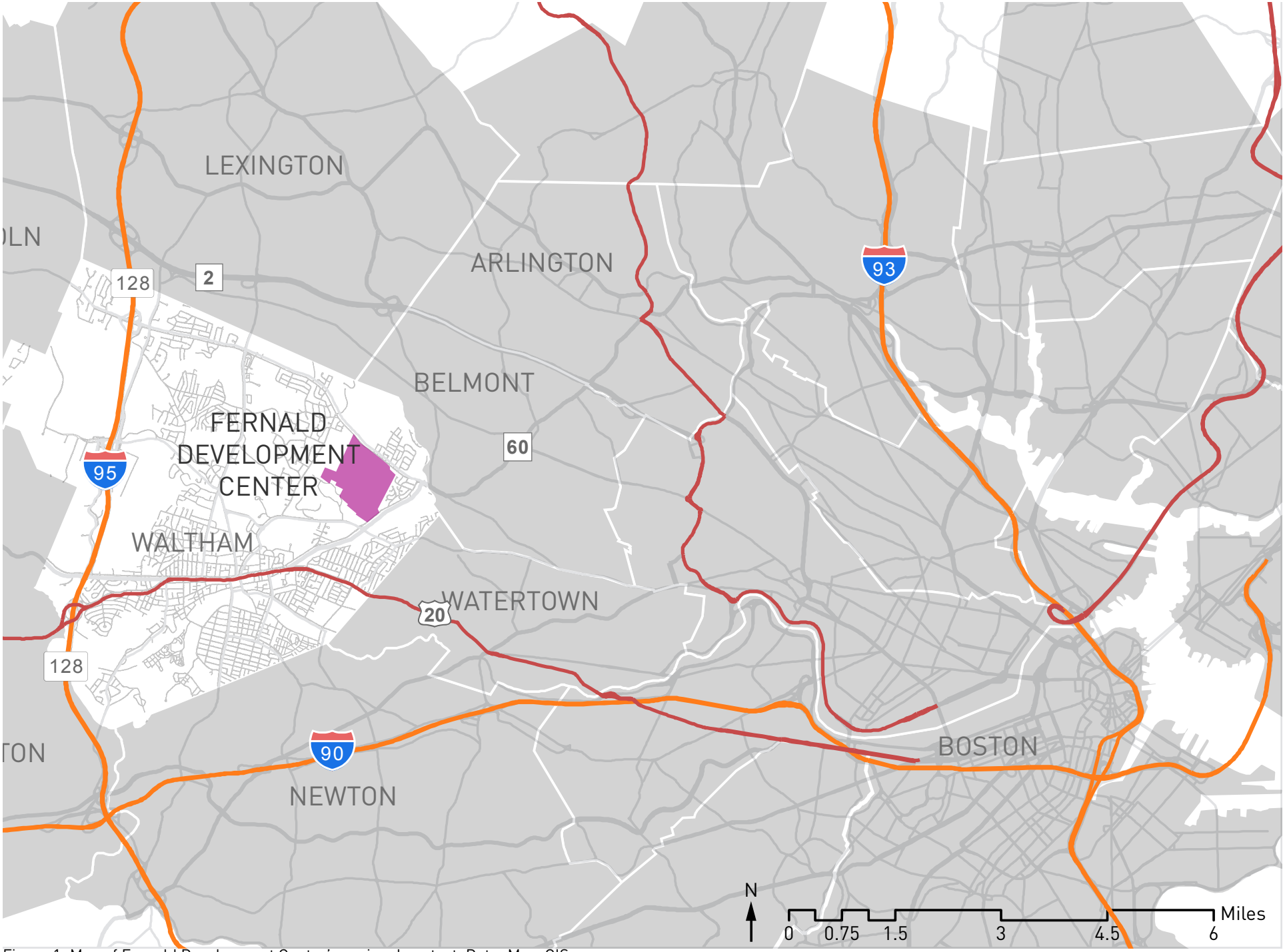


Figure 1: Map of Fernald Development Center's regional context. Data: MassGIS.

downtown Boston and is considered among Boston's first ring suburbs. U.S. Census (2014) data indicates that Waltham is comprised of 13.6 square miles and a population of 60,632 residents as of 2012. Median household income for that year was $72,332 with 10.9% of residents living below the poverty line. The same census data indicates a 48.8% home ownership rate of the 24,926 housing units. For 2014 fiscal year, Waltham has the fourth lowest residential tax levy, by percent of total levy, in Middlesex County, behind Cambridge, Everett and Burlington. In addition, it has the second highest commercial tax levy, by percent of total levy, in Middlesex County, behind only Burlington.[1]

SITE DESCRIPTION

The Fernald Developmental Center in Waltham, Massachusetts is a residential treatment hospital for individuals with mental and/or physical developmental disabilities. With 73 significant buildings on 176 acres (DCAMM 2011), the site is considered the largest contiguous land parcel in the city and surrounding communities that is available for development. The Commonwealth of Massachusetts owns and manages the land and according to Chapter 7C of Massachusetts General Laws, the city has an option to purchase the land for direct public use or enter into a competitive proposal process for anything other than direct public use since it is being surplused by the state. Currently, the city of Waltham is among three communities (Medfield, Westborough and Waltham) for which the state is proposing a land disposition strategy that would effectively transfer surplus state land to the local community (Stanley 2014).

Between 1960 and 1985, Massachusetts State Hospital patient populations plummeted from around 20,000 to 2,000 in a process known as deinstitutionalization (Rochfort et al. 1999). Many of the remaining patients in state facilities required a high level of treatment and care due to the severity or chronic nature of their illnesses and conditions, and facilities such as the Fernald Development Center continued to provide the intensive services that could not be found in the community (Reardon 2009; Ansberry 2013). In February 2003, Governor Mitt Romney declared the Commonwealth would close Fernald, which triggered an outcry from concerned citizens and sparked public debate regarding the role of such institutions and the quality of care they provide (Hammel 2003; Telegram & Gazette 2003). Today, Fernald remains open though fewer than ten residents remain under treatment as the Commonwealth and the residents' guardians are in litigation.[2]

Fernald is officially closed to the public and the majority of the site remains unused, although several buildings operate as care facilities for the remaining residents. The site is listed on the National Register of Historic Places and contains two historic sites, 44 historic buildings and two additional historic structures (MHC 1993). These buildings were erected in two distinct periods in the school's history. The work of noted

[1] This information was derived from the Massachusetts Department of Revenue Division of Local Services Municipal Databank (see references.)

[2] The residents of Fernald are protected by a class-action lawsuit filed in 1973 and resolved in 1993 that guarantees them the right to care of the same quality or better than what they receive at Fernald. Much of the present litigation revolves around the interpretation and determination of the quality of care and the extent to which the guardians of patients who have been, or are anticipated to be, transferred out of Fernald believe the new facilities are capable of providing equal or better care (Ansberry 2013).

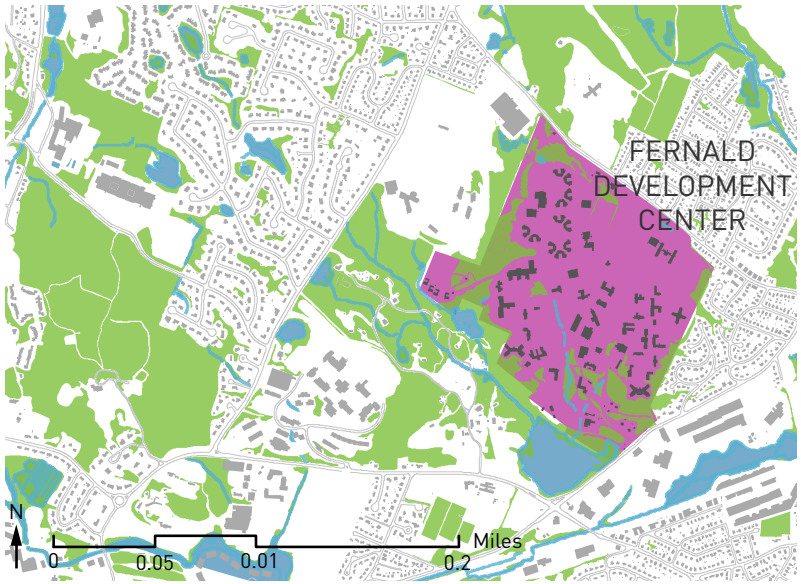


Figure 2: Fernald in the context of the surrounding community. Data: MassGIS.

Boston architect William Gibbons Preston defined the first period, where between 1888 and 1907 twenty major buildings were constructed in the Romanesque Revival style, beginning with the first female custodial wards in 1889. The second major period of building construction occurred in the depression years between 1931 and 1934. The architect Clarence P. Hoyt designed a new administration building and several wards and maintenance facilities in the Colonial Revival style (MHC 1993). Several of these structures have been abandoned or neglected and are in various states of disrepair. The buildings in the poorest condition appear to be those that comprised the original campus and have the greatest architectural significance (MHC 1993). Considerable work has been done to inventory and document the historical significance of the Fernald buildings.

THE FERNALD WORKING GROUP

Our partner in this study, the Fernald Working Group, is a coalition of Waltham community members and residents who desire a community-based proposal for the redevelopment of the Fernald Developmental Center. Though the interests of the group vary, there is general consensus among the FWG that future development should focus on open space, affordable housing, and concern for remaining residents. The group seeks to ensure that a sustainable, multi-purpose development strategy is adopted for the site. The most recent articulation of the FWG vision statement expresses a desire to pursue community goals which tie into the history of Waltham, including:

1. Preservation of services for the community
2. Creation of new affordable housing
3. Preservation of historic buildings
4. Brownfield restoration
5. Stimulation of small business
6. Expansion of Waltham's open space and greenways
7. Transportation linked to development

After developing the broad goals outlined in their vision statement, FWG held regular meetings and informational sessions with local stakeholders in order to build and maintain good communication and relationships. After several years of inactivity regarding the sale and disposition of the site, the FWG agreed to refocus their efforts on specific issues for which they believed there was broad consensus and that had become, or were likely to become, impediments to the successful transfer, integration and reuse of the site.

Figure 3: Aerial view of Fernald site. Source: Massachusetts Executive Office of Transportation, Waltham Planning Department.

Figure 4: One of the buildings at Fernald. The buildings are in various stages of deterioration. Source: Daderot.

TUFTS INVOLVEMENT

The FWG approached Tufts University's Department of Urban and Environmental Policy and Planning (UEP) to assist them with specific planning objectives related to their vision and the perceived impediments to a successful development of the Fernald site. This student-led project grew out of those conversations. FWG identified the following five issues that they believed intersected with the broader interests of state, regional and local stakeholders and therefore could be helpful in building and strengthening relationships as they seek to fulfill their vision.

EXPANSION OF THE WESTERN GREENWAY

The Western Greenway is a linked series of trails and open spaces assembled from various land parcels in the region surrounding Fernald. The Greenway extends into parts of Lexington and Belmont and is open to the public. There is considerable agreement among neighboring communities regarding the value of the Greenway and the need for its expansion through the Fernald site.

DECOMMISSIONING THE ON-SITE POWER PLANT

This plant provides heat to the majority of buildings on the site and accounts for a large proportion of the annual operating costs for the facility. Replacing the plant with heating specific to occupied buildings would mean significant savings to the Commonwealth and allow for the start of environmental remediation activities.

RESTORING AND IMPROVING THE EXISTING WATER FLOWS ON THE SITE

Uncovering, or "daylighting" the culverted stream, which runs from the northwest to the southern border of the property, could help alleviate the flooding of neighboring properties which has become a recurring problem, and help restore the wetlands near Waverly Oaks Road.

ASSESSING THE CONDITION OF THE HISTORIC BUILDINGS

In order to prioritize the preservation of historic buildings and retain the historical integrity of the site, a comprehensive building assessment could help determine where to invest resources and leverage funds for future redevelopment.

ASSESSING THE GREENE BUILDING FOR POTENTIAL USE AS A FULL-TIME RESIDENT CARE FACILITY

One of the main obstacles preventing the decommissioning of the site has been the abundance of therapeutic resources, including the pool, located in and around the Green building complex. By concentrating the residents and resources into one location it might be possible to surplus other parts of the site and speed up the disposition process.

Building on these issues, our team developed a more limited scope of work that would advance the FWG aims within the confines of a semester-long project.

DEVELOPMENT OF RESEARCH QUESTIONS

In developing the scope of this project, we considered whether Fernald was following a path similar to that of other sites that had undergone the processes of disposition and reuse. We also questioned why the disposition process appeared to be so complex and how sites like Fernald could benefit from a deeper exploration of the common issues involved in the transfer and reuse of these unique publicly-owned properties. Three questions emerged to guide our research:

1. What are the common issues in repurposing and developing large institutional sites that have outlived their original purpose?

2. What are the interests and values of local and regional stakeholders concerning the Fernald property?

3. Given those common interests and values, what strategies and processes can be applied in the reuse of the Fernald property?

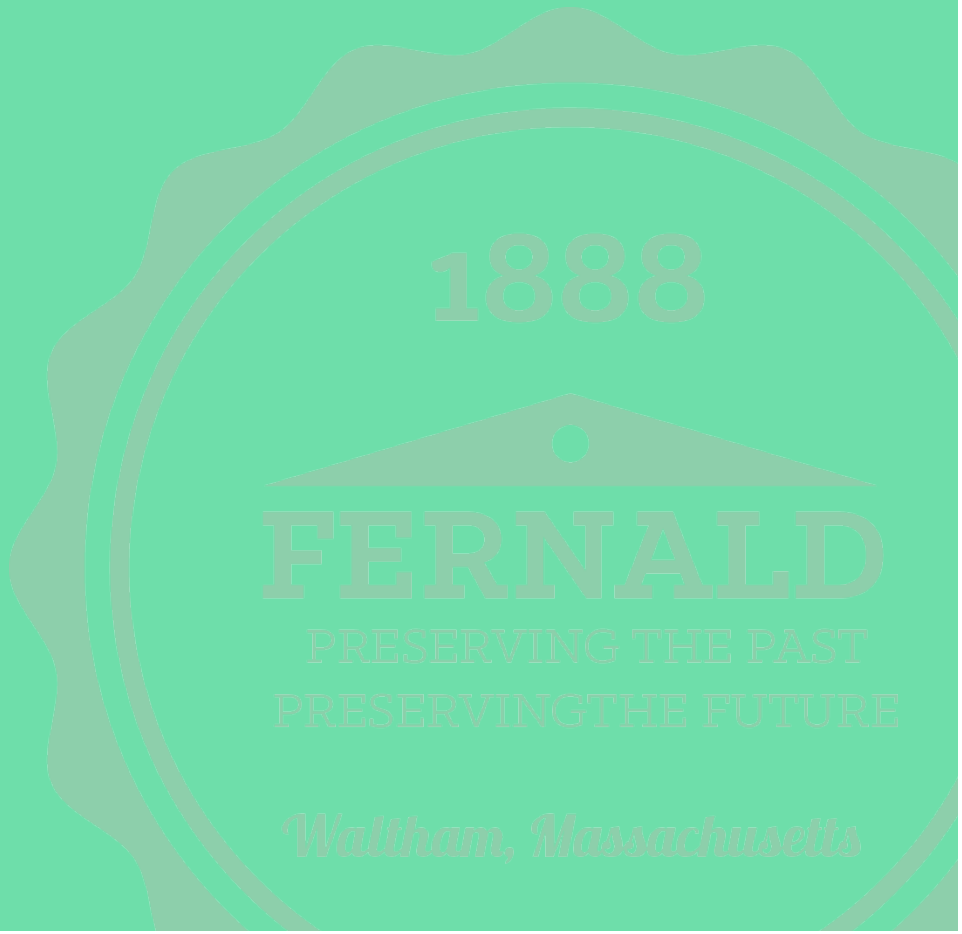
GOALS

The goals of the project are to understand current conditions of the Fernald site, to research past efforts of integrating similar sites into communities, and to distill the information into meaningful content for the Fernald Working Group. From there, the team will recommend next steps for FWG as the City of Waltham prepares to receive the land parcel under the ongoing Sale Partnership Model (Stanley 2014) negotiations with the Commonwealth of Massachusetts.

STRUCTURE OF THE REPORT

The next section of the report presents an historical context that framed our research and analysis. After establishing context, the report presents the findings of existing academic literature as it pertains to our research questions. Topics covered include the disposition of institutional sites, adaptive reuse, community involvement in the redevelopment of similar sites, managing brownfields in the reuse process, and mothballing. An explanation of the research methods follows the literature review. Subsequently, the analysis and results for each of the methods-surveys, meta-analysis and stakeholder interviews-are presented. The report ends with the team's conclusions including recommended next steps.

2. CONTEXT



HISTORICAL CONTEXT

Fernald assumed its first form in 1848 when Samuel Gridley Howe founded the Massachusetts School for the Feebleminded in South Boston. The school accepted pupils from across Massachusetts and even neighboring states. By 1887, the school's population had grown to 231 and the number of new applicants routinely surpassed the number of patients discharged into the community (MSFM 1888). In 1888, under the direction of the third superintendent, Walter E. Fernald, land was purchased from the Warren and Bird estates in Waltham and construction began on the first asylum ward on this site. In 1889, the first female custodial cases were transferred to the new facility (MSFM 1889).

The history of the Fernald Developmental Center is well documented and this report does not intend to provide detail that is readily available elsewhere (Daly 2014, MHC 1993). However, there are several historic considerations that are important to this analysis. The following section seeks to ground a discussion of Fernald in the idea that its future use depends in large part on public perception of its past. The premise is that the appearance and function of state care facilities reflect the values of the communities and societies that built them and struggled to keep them going in the face of broad social, political, and economic forces. These facilities are much more than simple agglomerations of buildings on large parcels of land; they are repositories of cultural heritage and community history, and though in some ways they parallel other institutional and industrial sites, state-run treatment centers present us with many unique features that deserve considerable attention.

Figure 5: A boys' dormitory at Fernald when the city was known as Waverly. Source: Rootsweb.ancestry.com.

SOCIAL, POLITICAL AND ECONOMIC CONTEXTS

Of primary consideration are the social and professional contexts concerning the treatment of mental illness and the central role that state institutions played in defining them. Both the intimate physical world of patients, residents and staff, and the outward public face of the places that represented them were consciously imbedded in the landscape and architecture of state institutions for the treatment of the mentally disabled. Fernald was designed and built at a time when considerable debate surrounded the treatability of mental illnesses and whether resources should be expended on facilities for the cure of mental illness or the long-term care of patients. Thomas Story Kirkbride, the superintendent of the Pennsylvania Hospital for the Insane and founder of the Association of Medical Superintendents of American Institutions for the Insane (AMSAII), published his ideas on the

Figure 6: 1857 photo of Fernald when it was known as the Massachusetts School for the Feeble-Minded. Source: Harvard Art Museums/Fogg Museum

physical organization of mental hospitals in 1854 (Kirkbride 1854). The basic plan called for a linear series of connected treatment wards built around a central administration building to allow for easy access, proper ventilation and abundant natural light. This arrangement rapidly became the standard for the design and treatment of the mentally ill (Yanni 2007). This ubiquitous and monumental architecture of the Kirkbride plan hospitals had its foundations in a philosophy of curative, or "moral" treatment and was rooted in the ascendant industrialism of the nineteenth century. The booming economy of the northern states continued after the Civil War had ended and was accompanied by unprecedented urban growth. Policies designed to strengthen the principles of an industrial free-market, such as the Homestead and Morrill Acts of 1862, fueled territorial expansion from the north, generating enormous wealth in the Northeast and Midwest (Arrington 2014). This gave rise to both private and public investment in civic amenities. The proliferation of state mental hospitals under the Kirkbride plan was a reflection of an industrial dedication in the application of scientific principles to the problems of mental illness as well as the wealth necessary to build such prominent monuments dedicated to social welfare (Yanni 2007).

It is not an accident that the rise of the land grant universities parallels that of the Kirkbride hospitals; both institutions were revered as great civic amenities (Yanni 2007). Kirkbride hospitals, with their expansive manicured grounds, well-lit and breezy wards, and an optimism that such surroundings could assuage the mental anguish of an increasingly industrial and frenetic society were as much a product of ebullient economic growth as they were of the medical and technical innovations that grew out of the war itself. Despite their often bucolic settings, Kirkbride hospitals were typically built in prominent locations with beautiful views and ample breezes. Many could be seen and admired from a distance. However, almost as soon as these facilities were built, they were subject to incessant budgetary pressures and an ever-increasing demand for treatment. Kirkbrides were typically built to accommodate between 250 and 500 patients, but soon faced overcrowding. These structures took years, sometimes decades, to plan and construct and required an enormous commitment and expenditure of public funds.

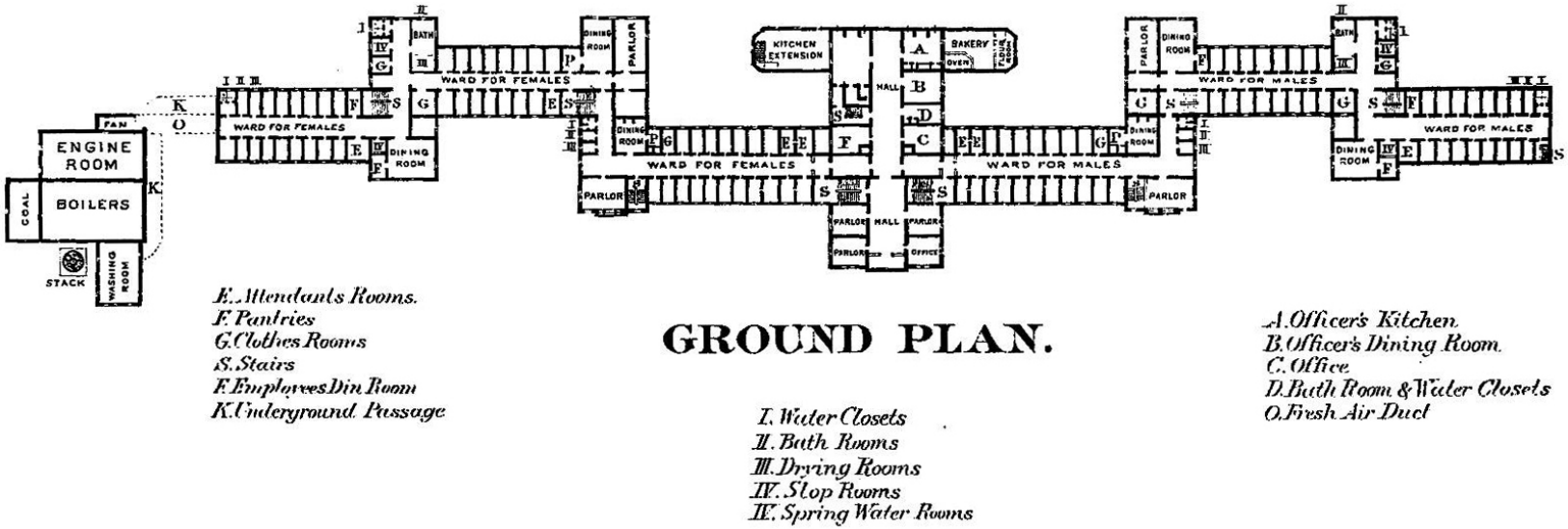


Figure 7: An example of the Kirkbride plan. Source: kirbridebuildings.com.

Though construction of Kirkbrides continued into the Twentieth Century, this often had more to do with the long process of funding, planning and constructing these massive facilities than a lasting commitment to the philosophy of moral treatment. European immigration, a series of economic recessions in the last quarter of the Nineteenth Century and the increasing difficulties of life in the growing industrialized urban centers were all factors that contributed to the demise of the Kirkbride model. Issues of overcrowding, diminishing resources, and administrative pressures occurred alongside the mental health profession's reassessment of moral treatment and the extent to which patients could be cured and returned to their communities as productive members of society (Yanni 2007; Payne and Sacks 2009).

Fernald was established during the transition to this new era. The treatment philosophy embedded in the rational and systematic configuration of the Kirkbrides was largely discredited for a more informal model based on community care; the idea that the disabled would better recover or live higher quality lives in a real world setting, or at least an environment that tried to simulate one. The cottage plan, as it came to be known, was characterized by a loose configuration of individual buildings, some of which were self contained, but many of which were part of a larger campus. The model is also closely associated with the rise of women's colleges in the Northeast, most notably Mount Holyoke and Smith, where smaller individual facilities could serve immediate

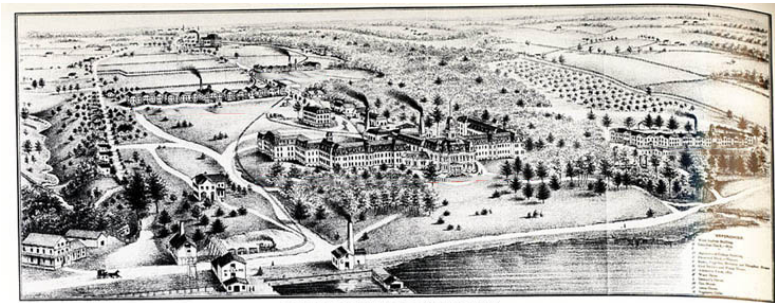


Figure 8: Willard State Hospital. Source: kirkbridebuildings.com

needs at a low cost, allow for future growth and help ease the burden of administration and surveillance (Yanni 2007). The Willard State Hospital on the shores of Seneca lake in upstate New York was one of the first of the state asylums where chronically ill patients were moved to secluded rural areas for long term custodial care. Willard also represents one of the first facilities in which the therapeutic rationale for the architecture fell away, and the Kirkbride model, though still present, began to shift to a more dispersed collection of smaller buildings (Yanni 2007).

The design of the original Fernald campus represents a conscious shift toward custodial care and a transitional architecture that sought the logic and economy of incremental development of several purpose-built structures. Retaining some of the grandeur of the earlier Kirkbrides, yet on a more intimate scale, the Fernald buildings are somewhere between Kirkbrides and the full realization of cottage plans still to come. While Willard State Hospital was a direct inspiration for the plan of Fernald, it is also generally believed that the original architect, William Gibbons Preston, modeled the Fernald campus on the meandering walkways and nature paths that Frederick Law Olmsted designed for McLean Hospital, located a mile away across Trapelo Road in Belmont (MCH 1993). The Romanesque Revival architecture of Preston's buildings resemble the style popularized by Henry Hobson Richardson, who worked closely with Olmsted on several projects, most notably the Buffalo State Hospital complex (Krieger Sieniewicz 2009).

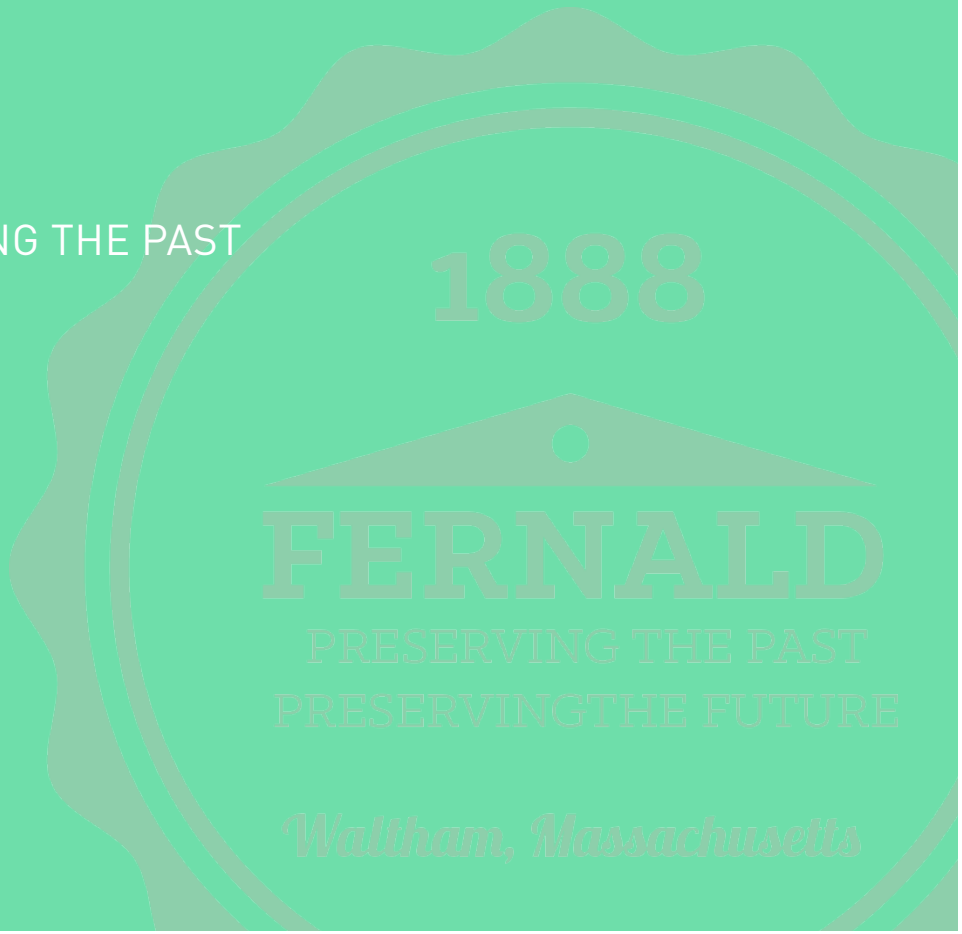
Despite the shift toward custodial care the Fernald School remained dedicated to a philosophy of rehabilitation through manual training and developed extensive programs in the manual arts that were nationally and internationally recognized for their innovation and success (MHC 1993). Fernald resembles a university campus or small town largely because it functioned in much the same way (see Figure 6). Students at Fernald took part in manual training and the day-to-day operations of the facility (Daly 2014). This routine, labor and socialization associated with manual labor and training would eventually come to be viewed as cruel and inhumane treatment, but Oliver Sacks points out that, even though abuses of this system were to become commonplace, the enactment of laws in the Twentieth Century prohibiting the employment of patients in manual labor took away the one authentic tool for the long-term treatment of patients and had a drastic effect on patients quality of life, and the self-sufficient model of state hospitals that did everything from producing their own food to making their own clothes and tools, disappeared (Payne and Sacks, 2009).

With the rise of psychoactive drug treatments in the 1950s and the beginning of deinstitutionalization, many custodial patients were caught in the debate between community care and the need to provide long-term services for patients whose ailments were difficult to treat. As more patients were introduced into the community system, funding for the massive state hospital systems dried up and many hospitals acquired the image of inhumane facilities where patients languished in the abysmal conditions of neglected back wards (Payne and Sacks 2009).

Fernald would eventually acquire a similar reputation, having been at the center of the eugenics movement in the U.S. at the turn of the century and the questionable practice of accepting students with no apparent disabilities would cast a shadow on the institution, as would later revelations that the students were subjected to radioactive compounds against their will for experimental purposes (Daly 2014). But as the older buildings on the property were emptied out and fell into disrepair, renewed investment in the 1970s and 80s would reestablish Fernald as a state-of-the-art facility with the ability to treat and care for the most severely disabled.

Our research indicates that Fernald's reputation in the community has largely been restored and has come to be viewed as serving an important function in the broader community. However, decades of neglect, rising operational costs, and a continued trend toward community care have produced a site with as many liabilities and challenges as there are assets and opportunities. The following section explores some of these issues as they pertain to the reuse of these institutional sites.

3. COMMON ISSUES IN REPURPOSING SIMILAR SITES



OVERVIEW

The Fernald reuse process began in 2004 with the establishment of an advisory committee authorized by the state to engage the local community with city and state officials to inform the decisions of the state Commissioner of the Department of Capital Asset Management and Maintenance (DCAMM).

Fernald, like many other state institutional facilities, faces complex environmental, physical, and social challenges. Most of these challenges stem from the historic and operational factors related to the site, as described in the preceding chapter, while some stem from the bureaucratic process governing the disposition and transfer of state land to another public or private entity. In this section, we explore literature that details the common issues and best practices in state hospital reuse. We highlight environmental concerns of brownfield remediation, the benefits and possibilities of open space, the importance of structural preservation as a precursor to reuse, and issues related to the stigmatization associated with repurposing these institutional sites.

BROWNFIELDS

Brownfields are defined by the U.S. Environmental Protection Agency as "idle real property, the development or improvement of which is impaired by real or perceived contamination" (Hollander 2010). Given their self-sufficient nature, state hospitals often had on-site power plants that served the entire campus, as is the case at Fernald. Sites undergoing reuse today are often identified as brownfields due to environmental contamination from materials that were used in the operation of these power plants and in construction of other buildings on the campus. Among these contaminants are asbestos and lead.

Redevelopment of urban brownfields has been a major revitalization activity since the mid-1990s, driven by economic opportunities (De Sousa 2004). Remediating brownfields attract private-sector investment, generate new employment opportunities and create opportunities for expanding a municipality's tax base (De Sousa 2004). According to a survey of 231 cities, brownfield redevelopment could produce over 550,000 new jobs and up to $2.4 billion annually in additional tax revenues (US Conference of Mayors, 2000 as cited in Dorsey 2003). However, there is a growing dichotomy between redeveloping brownfields for commercial or industrial purposes and conserving brownfields as green or open spaces, a beneficial use that we discuss in greater detail in the following section. The latter trend is gaining popularity especially in Europe: between 1988 and 1993, redevelopment focused on sport and recreational uses in England and in Scotland; 21 percent of redevelopment was devoted to open space, recreational and leisure uses (De Sousa 2004).

Remediating brownfield sites to open space has its own economic benefits in addition to improving the state of the environment and enhancing quality of life. Among these are: (1) cost avoidance related to urban sprawl and infrastructure provision; (2) investment opportunities through an increase in property values; (3) the regeneration of local economies; (4) tourism enhancement; (5) farmland preservation; (6) hidden service provision (e.g. flood control, wetlands); and (7) overall ecological improvement (De Sousa 2004). Preserving open spaces are seen as "land use strategies that emphasize long-term sustainability goals rather than unrestrained economic growth and resource expansion" and thus are an important consideration in sustainable development (Dorsey 2003).

REDUCING BARRIERS TO PRIVATE REDEVELOPMENT	CONNECTING REUSE TO BROADER COMMUNITY GOALS
Liability for contamination	Environmental, health, and safety protection
Uncertain cleanup standards	Targeted jobs and training
Availability of funding for redevelopment	Central city revitalization/reduced sprawl
Complicated regulatory requirements	Meaningful community participation

Table 1: The brownfields dual land-use policy challenge. Source: McCarthy 2002.

The process of redeveloping brownfields is characterized by the challenges of meaningful community engagement and participation. While redevelopment often focuses on purely economic factors, communities may have broader needs and values, including environmental justice, regional land use and environmental quality (McCarthy 2002). An example is the argument between brownfield redevelopment towards commercial uses and open space protection. Deciding between the two uses (or a balance of the two uses) is ultimately a reflection of a community's values in regards to their vision for the future of the community. This example offers challenging views of long-term sustainable development and smart growth and the fiscal opportunities presented by increasing a municipality's tax base through commercial development. The tenuous relationship between private development and community goals is described by McCarthy as the "dual land-use policy challenge" (2004, 288).

OPEN SPACE

Mental health professionals of the 19th and early 20th century considered the grounds of mental institutions to constitute a significant component of treatment. This role stemmed from the belief that a therapeutic environment could improve the mental health of the patients (Hawkins 1991). So integral were therapeutic landscapes that some institutions recruited nationally famous landscape architects like Frederick Law Olmsted who designed for asylums such as the Buffalo State Hospital (Krieger Sieniewicz 2009). In many cases, the landscaping represents an asylum's history as strongly as the structures and should thus be preserved with equal vigor.

The asylum grounds provided a tranquil sanctuary for the patients. Asylum architects tended to favor hilly or ridged terrain, elevated and removed from population clusters, as locations for mental hospitals. These sites maximized vistas and breezes (Bunnell 1992). Asylum grounds incorporated sweeping lawns, curving roads and pathways, and groomed plantings and trees (Krieger Sieniewicz 2009). The grounds offered space for both enjoyment and work (Hawkins 1991).

Physical laboring in the outdoors constituted a significant component of treatment, as it improved patients' bodily health, help to fill a strictly regimented schedule, and contributed to the operations of the asylum.

The historical importance of asylum landscapes means that today campuses present substantial resources for introducing new open space to the public. In many cases where surrounding municipalities and metropolises have been developed, asylum grounds now represent a rarity: undeveloped land. Though perhaps lacking care in the last few decades, the remnants of the once carefully tended landscapes can now provide a model for future open space in both plan and remaining plantings.

In terms of the development process, preserving or rehabilitating the landscape creates an asset that attracts the public to the campus. This serves to drive the integration of the site with the community (Joseph et al. 2013). Opening the asylum grounds allows the public to engage with the campus on a level not previously possible. An expanded understanding of the site can catalyze further public interest. For this reason, preserving open space first before comprehensive redevelopment helps to stabilize the property (Mallach 2006). Implementing open space as interim or "potentially permanent" use can foster community participation in the planning process. The risk exists, however, that once introduced as a public resource, open space proves difficult to reclaim for any alternative use. The users may develop a sense of ownership and oppose plans that encroach on the natural landscape.

Physically, open space encourages integration by providing a transition among different land uses. Utilizing open space along the property's edge can more smoothly connect campuses to neighboring properties, acting not as a hard separation between the two but as a gentle buffer. Trails and paths additionally contribute to the integration within the community by allowing pedestrians and bikers to easily access the site.

Leaving other space as unprogrammed allows for flexibility and adaptability in function. The land can respond to the wants of the residents. Residents can shape the green space network according to patterns of use, which strengthens the relationship between users and the network and therefore the integration of the site and the community. This additionally allows a public open space to convey benefits to users most effectively and supports wider inclusion (Rodgers 2005).

MOTHBALLING

Vacant buildings are often present on contaminated land such as brownfields. Fundamental to the issue of reuse is the condition of the physical asset(s) in question. Vacant buildings often present the most vexing problems because even benign inattention and neglect can quickly lead to substantial deterioration. Buildings that have been vacant and neglected for decades often deteriorate to the point where extraordinary methods of stabilization and repair have to be employed in order to salvage the structure. In a technological age when both traditional and modern methods are available, nearly any building can be salvaged or rebuilt; the question becomes whether it is desirable or feasible. The building materials, methods of construction and the nature and extent of deterioration are the three primary factors in evaluating the physical ability to salvage and restore vacant structures.

Building control is a reuse component wherein the process of mothballing occurs. Mothballing is simply the physical process of stabilizing a building. Various reasons guide planners and preservationists to mothball buildings. Sometimes called stabilization or deactivation, mothballing should be used as an interim solution when there is no agreement on the future of a building but demolition has not been determined (Burchell and Listokin 1981). Mothballing is also a stop-gap method to protect vacant, historic buildings that allows for the planning and funding process to continue (Burchell and Listokin 1981). Finally, buildings are mothballed to secure them if deemed unsafe by building inspectors, to mitigate vandal risk or to prevent further decay due to exposure (Burchell and Listokin 1981).

DOCUMENTATION	1. Document the architectural and historical significance of building 2. Prepare a condition assessment of the building
STABILIZATION	3. Structurally stabilize the building, based on a professional condition assessment 4. Exterminate or control pests (termites, rodents, birds) 5. Protect the exterior from moisture penetration
MOTHBALLING	6. Secure the building and its component features to reduce vandalism or break-ins 7. Provide adequate ventilation to the interior 8. Secure or modify utilities and mechanical systems 9. Develop and implement maintenance monitoring plan for protection

Table 2: Nine steps recommended by the National Park Service for property control.

As in other components of the reuse process, planning is critical. The National Park Service, the regulatory agency that manages the National Registry of Historic Places, on which Fernald buildings are registered, recommends hiring a preservation specialist to assess building specific needs and to recommend the appropriate mothballing techniques.

Table 2 outlines the three phases and supporting steps recommended by the National Park Service for property control (Cunningham 1987, Page 2). Mothballing efforts can secure a building for up to 10 years if done correctly which includes the upfront necessary repairs as well as a monitoring and management program (Cunningham 1987). However, a long-term reuse plan must be in-place as a vacant boarded up building will not survive indefinitely.

Stabilizing and mothballing marks a crucial step in the reuse process as it prevents further deterioration and preserves the building for future reuse. This should occur as soon as possible, even before any concrete plans exist for the site, so as to protect all potential uses of the campus. Not all stabilized buildings eventually undergo adaptive reuse. In some cases, when development plans remain extremely tentative, structures are first stabilized but later demolished after a more intensive evaluation of the campus and available resources (Cantell 2005). Nonetheless, in the face of uncertain plans for development, stabilization should be pursued whenever possible so as to maintain the greatest potential for the campus (Cantell 2005). Stabilization often costs less than demolition, a second incentive to defer immediate destruction of buildings that could become future assets (Rypkema 1994).

COMPONENTS OF ARU	SPECIFICALLY DEEMED CRITICAL TO ARU SUCCESS
PLANNING	• Develop a set of procedures or a plan to guide action(s). • Assess the magnitude of the (local) problem via inventory and inspection.
PROPERTY CONTROL	• Seek to control the distressed properties, to make interim repairs or to demolish those structures, which are beyond repair.
PROPERTY MANAGEMENT	• Manage buildings which cannot be made attractive to new private owners and dispose of those which can
PHYSICAL REVITALIZATION	• Prepare all surplus sites for one of the active or passive revitalization strategies

Table 3: Four components that contribute to the overall success of a reuse project. Source: Burchell and Listokin 1981.

ADAPTIVE REUSE

After the completion of stabilization, determining the future of the buildings emerges as the next priority. Adaptive reuse, renovating historic structures for new uses, can transition the assets of the past into valuable contemporary uses. Adaptive reuse is both a concept and a process. Generally speaking it is a sophisticated, comprehensive set of collective activities (process) used to deal with surplus or abandoned properties (concept) (Burchell and Listokin 1981). While any of the following activities may be put into practice by a municipality or for a specific building, the four components in aggregate, (see Table 3) contribute to the overall success of a reuse project (Burchell and Listokin 1981.

Adaptive reuse is a time consuming process, and may involve significant human capital and financial costs. As such, few municipalities articulate or execute such an integrated strategy-as above-due to one or more of these limitations. The planning stage is the foundation of such efforts as it is the phase to define scope, stage comprehensive tasks, and determine interdependencies, all of which contribute to operational efficiencies (Burchell and Listokin 1981). In the initial stage of planning, the process of physical assessment and inventory of buildings and land, permit a team to consider mitigation strategies for common issues in the reuse of the built environment and land.

In pursuing adaptive reuse, balancing history with the future is key. Designs should consider both what the building has been and what the building can become (Cantell 2005). Historical assessments should consider the structure itself, the people it served, and events that occurred on site.

Adaptive reuse should reflect as many aspects as possible of the building's historical significance. Often, developers preserve an exterior while gutting the interior (Ward Jandl 1992). Doing so removes context and thus a layer of history. Moreover, this destroys the more private history of structure and the narratives of those individuals that resided there (Ward Jandl 1992). Unfortunately, some floor plans or interior designs such as prison cells or patient rooms, cannot be reconciled with new uses.

Although adaptive reuse can be a costly process, a number of fiscal incentives exist to spur historic preservation. Securing tax credits greatly improves the affordability of adaptive reuse (Rypkema 1994; Ward Jandl 1992). If it coincides with other policy priorities, the project may even be eligible for additional tax credits, for example brownfield redevelopment or affordable housing (Cantell 2005; Rypkema 1994). Currently, the Federal Historic Rehabilitation Tax Credit program can cover up to 20 percent of qualified costs associated with a historic project (NPS 2012). Low Income Housing Tax Credits provides a tax credit of 9 percent for otherwise federally subsidized projects (HUD). In certain targeted economic development areas the Brownfield Tax Credit Program offers up to a 50 percent reduction (Cantell 2005).

Spillover effects also lessen the economic costs of adaptive reuse. Preserving historic resources contributes to quality of life, a proven generator of economic development (Rypkema 1994). The value of abutting or neighboring properties often rise in the wake of historic preservation projects (Rypkema 1994). A stock of historic assets increases a city's ability to compete against other municipalities in attracting residents and businesses (Rypkema 1994). Additionally, historic

preservation requires more labor than new construction and thus creates more jobs during the construction process. Moreover, more of the money spent on historic preservation projects stays in the community (Rypkema 1994). Jointly, the economic, social, and historical benefits of adaptive reuse represent strong arguments for the preservation and renovation of state hospital facilities.

ACKNOWLEDGING AND ADDRESSING THE PAST

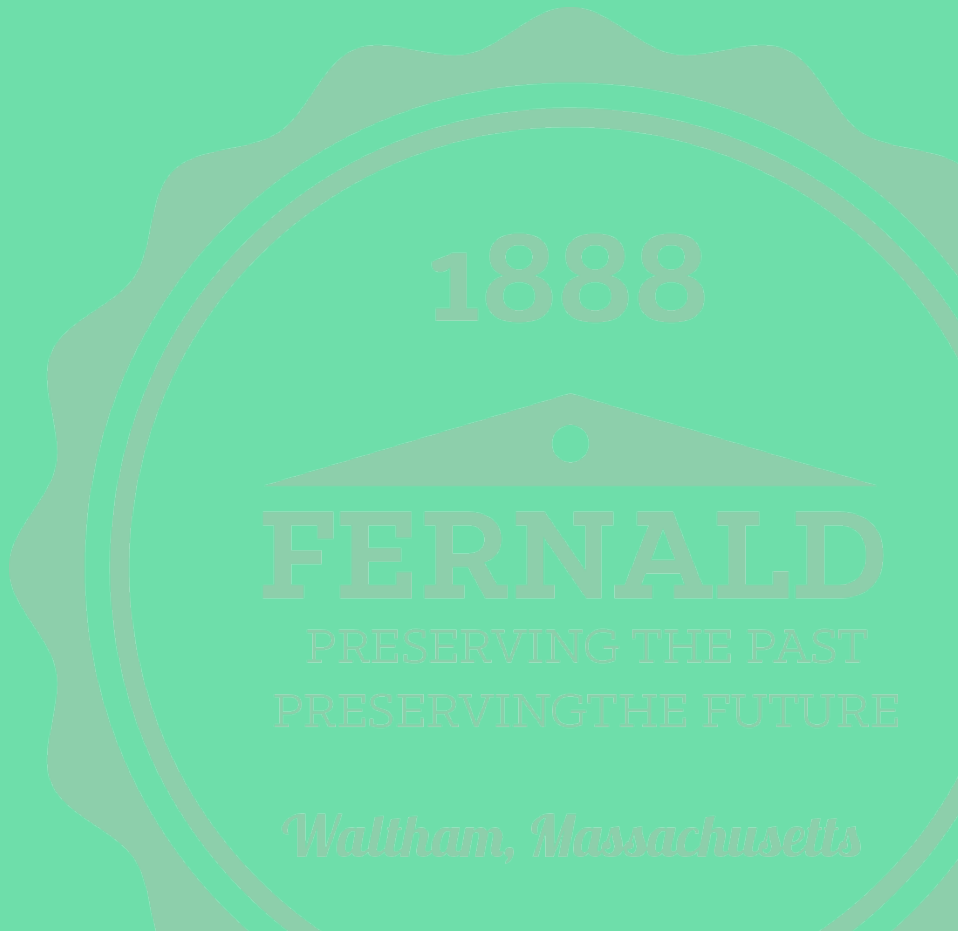
Today, with the promulgation of deinstitutionalization by the mental health community and the scars of mistreatment controversies, asylum campuses carry a level of stigma that may influence the reuse process (Joseph et al. 2013). For some, reimagining the facilities and grounds of state hospitals as attractive and welcoming proves difficult. These doubts can stall or even halt the redevelopment process, especially if plans strive to explicitly preserve the campus and facilities. Campuses unable to overcome a negative reputation often face complete demolition or abandonment.

Appropriate marketing and branding, however, can recast the campus as a historical and community asset. The site's contemporary narrative should be shaped to emphasize the positive side of asylum history. During the Reform Era, the time of construction of many institutions, asylums were sources of community pride. The grandiose monumental architecture, the sweeping manicured landscapes, and the recruitment of famous architects and landscape architects to carry out these projects attest to this. Asylums conveyed a sense of optimism, a public spirit, and a desire to aid the less fortunate (Bunnell 1992). With their wealth of historical and natural resources, campuses hold the potential to once again occupy a space of community pride. Marketing and branding play a key role in shifting public opinion. These efforts should be executed on both a local and regional scale (Mallach 2006).

But after stigma is alleviated, the past--even the less savory parts--should not be ignored. Development must strike a balance between "strategic forgetting" and "selective remembering" (Joseph et al. 2013). Memorialization, site specific physical reminders of previous uses, helps to achieve this. The preservation of historically significant structures is just one example of memorialization. Restoring the landscape or erecting new monuments can also serve to trigger remembrance. None of these, however, guarantee remembrance, which depends on the overall context (Joseph et al. 2013). For example, a building that undergoes an adaptive reuse process that preserves only the architectural significance and neglects the historical significance loses all connection to its past and consequently loses its power to memorialize. Respecting the past while creating a future for the site requires careful consideration when planning for reuse.

4. ENGAGEMENT OF STAKEHOLDERS

36 / COMMUNITY PARTICIPATION



OVERVIEW

As discussed in the previous sections, institutions such as Fernald evolved according their own disciplinary logic and needs, and yet were at the mercy of broad social trends. These institutions were closely linked to the communities in which they belonged. They housed and treated many local residents as well as provided jobs and a sense of identity. However, despite these close economic and social ties they remained isolated, with operational authorities distinctly separate from local government and control. In many ways, and Fernald is no exception, this relationship exempted these sites from the direct developmental pressures experienced by the neighboring communities.

The potential transition of the Fernald Developmental Center from a state run institution to an integrated community asset raises many questions about how the community can access the planning process and help determine the trajectory of changing land use patterns. FWG advocates for a community-based plan that draws on sustainable development principles and hinges on an ability to access the planning process in a positive and meaningful way. However, simply advocating for a meaningful public process does not ensure that it will happen. Nor does taking part in an established process that is meant to be responsive to community interests. This section outlines the issue of community participation as it pertains to some of the issues discussed in chapter 3 and draws a distinction between different levels of participation, especially as they concern the design of municipal procedures that help engage the public early on in an open and proactive way.

COMMUNITY PARTICIPATION

Public policy processes have been identified as an important component of public decision-making, but effective implementation is elusive. Sherry Arnstein's (1969) "A Ladder of Citizen Participation" summarized the typical processes, which range from "non-participation" to "tokenism" and finally "citizen control". Several studies have emphasized the importance of meaningful engagement with the public in ways that are accessible and that encourage constructive feedback (McCarthy 2002; Hollander 2012). Public notification, timing of events, language and method of engagement are all important factors to consider when eliciting collaboration.

Community participation is a challenge, especially in redevelopment processes as it relates to deciding the outcome of brownfield sites. Although public participation is often seen as a process which slows and complicates the development process, it has benefits that can make it "a mechanism for faster, better cleanup and redevelopment" (Powers 2000, 45). According to McCarthy (2002, 294) these benefits that community members can provide are (1) site-specific knowledge during site assessment, (2) workers trained for cleanup through government-sponsored programs, (3) employees for new businesses, and (4) a market for new products and services. One particularly effective strategy is to engage a wide range of stakeholders and establish links to foster long-term interaction and development of "mutual commitment" for beneficial action (McCarthy 2002, 294).

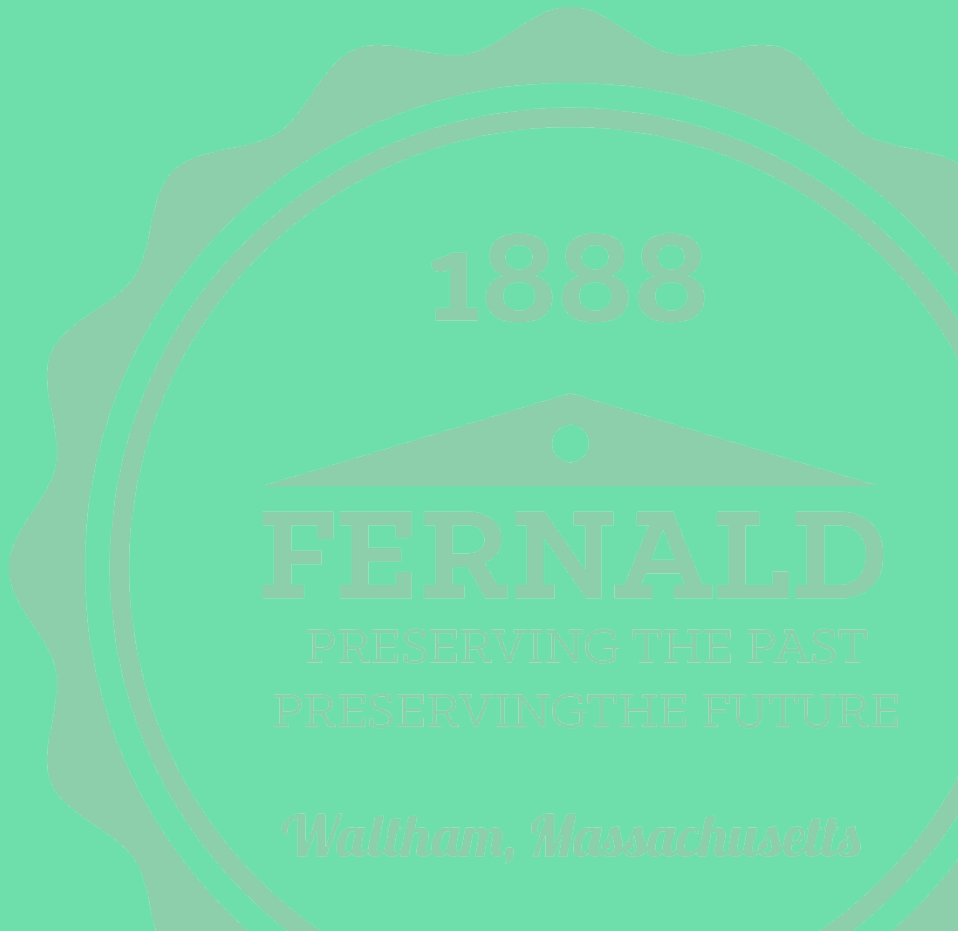
Community-driven processes promote familiarity and ensure that the development will be used by local residents, which drives integration of the site into the surrounding community. In contrast, isolating the community in the reuse process could lead to a site that does not complement nor engage with its setting. As an important first step, the community must be aware of the campus and its potential. Often, the majority of community members lack an accurate conception of a site or its resources for several reasons. Restricted access to asylum campuses limits the public's engagement with the site. Or, stigma and negative conceptions of mental health institutions discourages the community from seeking opportunities to engage with the site, even after the operations have ceased (Munoz 2012).

Designers of the redevelopment process should aspire to bring the public to the campus, both physically and socially (Bunnell 1992). Holding group information sessions allows developers to disseminate knowledge concerning the history of the site, its present conditions, and possible uses. These sessions may also include mapping and facilitate dialogue to encourage participants to share their visions for the site (Munoz 2012). Welcoming the public to the campus on certain days allows the visitors to learn more about their site on their own terms (Munoz 2012). If possible, some light rehabilitation of the grounds should occur in advance of the opening to improve the appearances and to establish informative signage that directs the visitors' attention (Munoz 2012). Both remote

and on-site opportunities to gain a better understanding of the site catalyze community engagement. These opportunities should occur repeatedly over time in order to truly foster ownership of the site, which encourages greater community investment (Munoz 2006).

Communication with the surrounding community must be clear, open and honest (Munoz 2012). Without question, community members must be engaged in the development process, but their involvement introduces possible tensions between the community and planners or community and local government (Mallach 2006). This possibility must be addressed from the beginning. First clarifying--for both the benefit of the public and other stakeholders--the role of the community and the anticipated extent of their involvement prevents conflicts (Mallach 2006).

5. RESEARCH DESIGN



OVERVIEW

In this chapter we present the structure of our research process. We provide detail concerning the motivation behind each research method used, the organization and application of these methods, and the research questions they support. Three principle methods were used to answer our research questions: a meta-analysis of publicly owned mental-health related institutions in New England, an anonymous survey of FWG members, and stakeholder interviews. Meta-analysis can be used to collect and analyze a large amount of data succinctly. The goal of using the method in this project was to answer our first research question, which looks outside of Fernald to identify common issues in the disposition and reuse of other state schools and hospitals in New England. We used the survey and interviews to answer our second research question, which seeks to identify the interests and values of local and regional stakeholders and to help understand where commonalities and differences may exist. A survey was used to gauge the values and interests of the individual members of our partner organization, the FWG, in relation to the their stated goals. We used the information gained from the survey to identify interview candidates and inform the interview process and guides.

EXAMINING COMMON ISSUES THROUGH META-ANALYSIS

Though the issues regarding the closure, disposition and reuse of Fernald may appear peculiar to Waltham and the site, the assumption is that these conditions are not unique. With the national trends of deinstitutionalization and budget cuts to state services, numerous state-run treatment facilities have faced closure and disposition over the last few decades. As we have discussed in the two preceding chapters, our approach began with a review of the existing literature to identify broad common issues and theoretical considerations generally shared in the disposition and reuse of large institutional sites. We then moved to the examination of empirical data, specifically, regional data that may better reflect the political, geographic and development pressures common in the New England area. Meta-analysis was chosen for its ability to examine a large amount of data quickly and identify possible relationships between variables. The literature helped shape our choice of variables.

MOTIVATION

Our meta-analysis seeks to identify trends among sites that previously underwent or currently face closure and redevelopment through a systematic collection and evaluation of empirical data. The meta-analysis makes several contributions to this study. First, as the sites included represent concrete examples of state hospital reuse, the meta-analysis supports our literature review, which focuses more on the theoretical issues of the process. Second, the meta-analysis aims to create a typology that FWG can use to contextualize Fernald. Last, during the research process sites emerged that may warrant further exploration as case studies or models for the future reuse process of Fernald.

To our knowledge, no complete or detailed standardized database of the current conditions of state mental treatment facilities in the U.S. exists, either in its entirety or by region . We hope the information our team assembled through this research will be a valuable resource for future scholarly investigation of state hospital reuse.

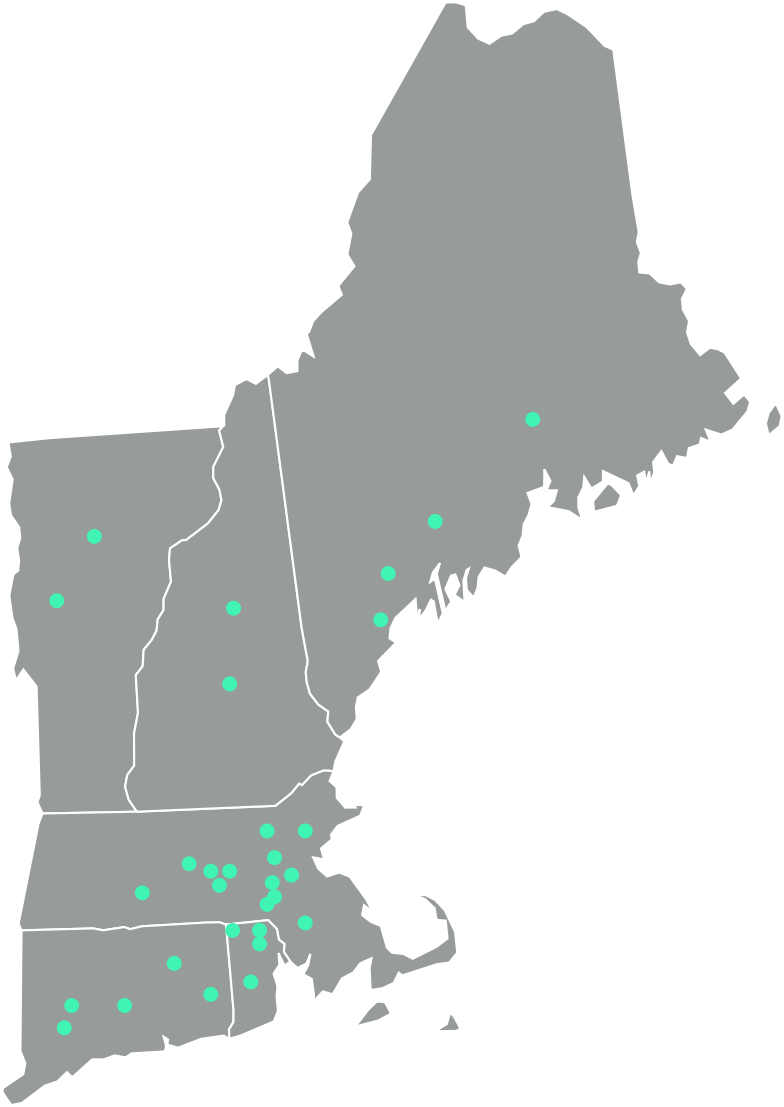


Figure 9: State hospitals and state schools considered for meta-analysis.

METHODOLOGY

First, we determined our selection criteria with the goal of completeness and with consideration of the limited duration of our study, three months. The sample area of the meta-analysis is comprised of the six New England states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. We restricted the type of facility to state hospitals and state schools. The facility must consist of multiple buildings on a multi-acre campus. The facility must have already closed or have a set closing date and dispossession must be achieved or intended; i.e. it cannot be considered an active hospital nor can the site have been transferred to another state use.

Next, www.asylumprojects.org, a website dedicated to historic asylums, was used to identify all state hospitals and state schools in our sample area, a total of fifty-seven sites. This website is dedicated to "the history of asylums in all forms" in the United States and abroad (Asylum Projects 2013, under About Asylum Projects). Asylums in the context of this website may include traditional mental hospitals but also orphanages, prisons or other societal institutions for treating individuals. The nature of the website is collaborative content creation and editing-a wiki. The protocol of a wiki is to attribute information to a source; as researchers we deem it prudent to mention the vulnerability of information on such sites. To our knowledge, no other comprehensive listing of such facilities exists. Our selection criteria eliminated a majority of these, leaving 20 sites for possible inclusion in the meta-analysis. Standard boolean search techniques were employed in a variety of electronic sources to obtain all information of interest for the sites, including: Google, LexusNexus, US Census Bureau, National Register of Historic Places (NRHP), and municipal websites.

From these sources, we collected information on the setting of the facility, its campus, the dispossession and reuse process, and the resulting outcome. After reviewing the available data, we selected a narrowed list of variables. The explanatory variables include population, population density, median household income, cottage plan, NHRP listing, reuse committee, citizen group, and redevelopment authority. The outcome variables of interest are affordable housing, adaptive reuse, open space, private developer, property division, and years in transition. These were chosen to align with some of FWG's primary objectives.

The meta-analysis utilized a number of statistical techniques to uncover associations and trends in the reuse process. First, analyzing basic summary statistics provided context for the sample. We then tested for significant differences in means across characteristics of the process, binning by independent variables. Logistic regression modeling was used to examine whether certain characteristics of the campus or setting increased the likelihood of particular outcomes. In cases where both variables of interest were binary, exact logistic regression took the place of logit regressions. Simple Ordinary Least Squares (OLS) regression was used only to look at the relations between two continuous variables, such as acreage and years in transition.

UNCOVERING CHALLENGES AND OPPORTUNITIES: FWG SURVEY

While our first question examines the issue of the reuse of state mental treatment facilities from a general perspective, our second research question focuses explicitly on the Fernald property. The team explored issues specific to Fernald through a survey of the FWG and interviews with selected stakeholders.

MOTIVATION

The members of the Fernald Working Group represent a broad range of community groups and interests. In recognition of this diversity, the team decided to survey FWG early in our research efforts to better understand the fundamental priorities of the members, both on an individual and at the group level. Our survey of the FWG sought to discover how the interests, attitudes, opinions and concerns of the members are consistent with or deviate from the official FWG vision statement, to seek elaboration on specific objectives of the FWG vision, and to help identify the areas of shared priority. We utilized the results of the survey to guide and inform our interviews in order to maximize their relevance to FWG's priorities.

METHODOLOGY

The survey was drafted and managed using Qualtrics, an online survey platform. The survey includes a mix of both open and closed questions. Question types include: multiple choice, multiple answer, ranking, likert scales, and free response. The survey is divided into two themes, the FWG Vision and Stakeholder Engagement.

The 15 members of the Fernald Working Group constituted the survey population. However, not all 15 listed members are currently active in the organization and thus our true population proved to be much smaller. Seven FWG members completed the survey, for a response rate of 47%.

To recruit participants, we first introduced the survey at a FWG meeting on February 10, 2014 and informed those present that an email would be sent with more information and a link to the survey. An email was sent to all FWG members on February 20, 2014 requesting the recipient's participation in an anonymous online survey; a link to the survey was included. The survey remained open from February 20th until March 3rd, 2014, a deadline set in order to accommodate analysis prior to commencing the interviews.

Once the survey was closed, the team reviewed the results using Qualtrics. Qualtrics allows survey administrators to view each respondent's completed survey. Qualtrics also compiles all responses into a single document, which proved useful for the consideration of closed-form questions (e.g. multiple choice, ranking, and likert scales). The team analyzed the distribution of pooled responses and the implications of these results. We looked to the open responses for additional insight on the participant's conceptions surrounding the site.

STAKEHOLDER INTERVIEWS

MOTIVATION

Community engagement and participation in the planning process is widely acknowledged in the literature as being critical to the success of a planning initiative (Fregonese 2011; Arnstein 1969; Greenstein 2004). As presented in Chapter 4, our research seeks to understand the values and interests of stakeholders pertaining to the Fernald property. Early inclusion of community stakeholders demonstrates the city of Waltham's intent to solicit and include community members throughout the planning initiative. Structured or semi-structured interviews are a compelling mechanism to bring awareness of the project to the community and personally engage stakeholders on their interests and opinions pertaining to community projects (Gaber and Gaber 2007; Kvale 2007). Our team conducted preliminary field research in the form of stakeholder interviews as a means to inform the analysis and recommendations of site reuse vis-á-vis stakeholder interests and values.

METHODOLOGY

The interview process used in this study followed Kvale's seven stages of an interview inquiry (Kvale 2007, 33-37). The research question—What are the interests and values of local and regional stakeholders concerning the Fernald property?—established a theme based around interests and values, and interview guides were prepared. Our study was categorized as human behavioral research and subject to a full review by the Institutional Review Board (IRB) based on the potential for professional risk if the personal opinions expressed by a subject ran counter to the agency or organization with he or she was affiliated. We were granted approval to perform these interviews by the Tufts University Institutional Review Board on March 26, 2014.

The original intention of this study was to interview a broad population of stakeholders representing local, regional and state interests. Due to time limitations the interview period was shorter than anticipated and the original goal of 12-16 interviewees was not met. A total of eight people were formally interviewed for this study, though the opinions and attitudes of others were considered in formulating the questions and articulating conclusions and recommendations.[1] The primary interview guide (see Appendix E) was standardized based on the application process for the IRB and therefore does not contain questions tailored to specific interviewees. The interview guide sought to understand interests and values through indirect questions concerning what uses the subjects thought were appropriate for the site, what needs they believed the site could fulfill within the regional and Waltham communities, what vision they might have for the site and surrounding areas, and the process through which these goals should be achieved. The primary goals listed in the FWG vision statement that provided the framework for many of our survey questions also formed the basis for follow-up questions during the interviews. Interviews often do not follow the scripted format, and comments and responses may indicate new questions or lines of inquiry (Kvale 2007, 56-66). In anticipation of this we prepared a list of secondary questions for each interviewee based on their known interests or professional affiliations.

[1] Verbal consent to interview was granted in ten instances. However, explicit written consent or verbal consent that followed the IRB protocol was not granted for two of these. Therefore, even though a conversation took place, no explicit information obtained from these interviews is included in this analysis.

Based on our research and conversations with members of the FWG we compiled a list of 44 potential stakeholders. This list included public agencies, private organizations, public officials and local institutions. Individuals were identified according to their affiliation with these entities and their status within them. The list was organized according to the relevance of each stakeholder to the Fernald site. These criteria included, but were not limited to, institutional abutters and organizations active in the area around Fernald, involvement in previous Reuse Committee activities, authors of significant reports and studies involving Fernald or the surrounding area, the operational authorities of the site, agencies involved in the disposition of the site, and public officials with some past or current jurisdictional authority for a district in which Fernald is located. Through this method we identified 34 individuals whom we believed could provide important information regarding various stakeholder interests and values. We then prioritized this list according to the results of the survey, attempting to represent both local and regional stakeholders, and include representatives of agencies and organizations directly involved in the primary interests identified by individual members of the FWG. In total we submitted seventeen requests for interviews and were able secure formal interviews with eight individuals.[2]

Seven of the eight interviews were performed in person and of these six were conducted by a single member of the research team in a professional setting. One interview was conducted by two members of the team in a public setting and other was conducted by a single member of the team over the phone. The duration of the interviews ranged from approximately 30 minutes to 80 minutes. The primary recording method was hand written notes, though five of the interviews were recorded for future reference. Due to the variety of responses regarding the use of interviewee names in association with affiliated organizations we have opted to keep the responses anonymous and eliminate the use of direct quotations.

The meaning condensation method (Kvale 2007, 106) was used to identify and summarize the primary issues, topics, and opinions discussed in the interviews. A matrix was created based on these notes in combination with interests and values identified through FWG vision statement and survey results (See Tables 8 and 9 in the next section). A total of ten primary interests and three values were identified. A yes entry in the matrix indicates the stakeholder's explicit or implied support for a particular interest or value, whereas a no entry indicates explicit opposition. An entry of "N/A" indicates that the topic was ether not discussed or a conclusion could be reached based on the information provided.

---

[2] Time was a significant limitation in this study. Responses to these requests exceeded eight. Some people declined interviews because they felt a lack of authority to speak on behalf of a particular organization or agency, or a desire to not interfere with an ongoing process. However, even when a person declined an interview this often led us to identify more appropriate candidates, and in most cases we believe that with more time and persistence we would have been able to secure interviews with most of the new and original candidates.

ANALYSIS OF RESULTS

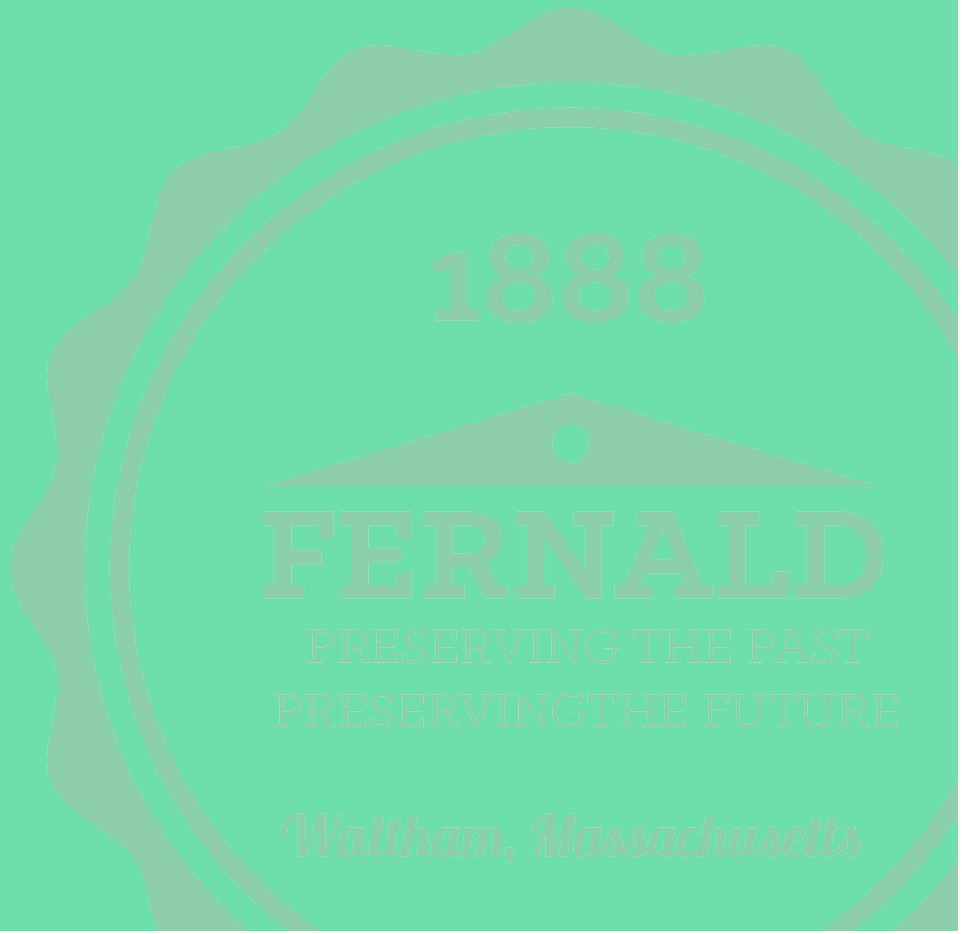
INTERESTS

1. The preservation and expansion of open space
2. The daylighting of the culverted stream that runs along the western portion of the property
3. The creation of affordable housing
4. The creation of small business opportunities
5. Transportation and transportation oriented development (TOD)
6. Traffic management along Trapelo and Waverley Oaks Roads
7. The preservation of existing services for the developmentally disabled
8. The creation of new community services (veteran's and senior housing, for instance)
9. The preservation of the historic buildings and landscapes on the site
10. The restoration of brownfield

VALUES

1. Sustainable development
2. Public participation in the reuse and planning process
3. Establishing a proactive and positive process

6. FINDINGS



COMMON ISSUES: META-ANALYSIS RESULTS

The results of our meta-analysis contribute to a general understanding of the disposition and redevelopment process and help to contextualize Fernald within the reuse landscape. We first summarize and describe the characteristics of our sample to present a general picture of the sites and the reuse process. We then compare Fernald to the average of all sites in our sample and those sites located in Massachusetts to determine broadly shared characteristics and those that set Fernald apart. Lastly, we present the statistically significant relationships that emerged from our analysis within the context of Fernald and discuss possible underlying mechanisms that determine the relationships.

SAMPLE CHARACTERISTICS

More than half of the sites of the sample are located in Massachusetts. See Table 4, which aggregates the attributes considered in this analysis. The other states are represented at a much smaller frequency; three Connecticut facilities, two each in Vermont and Rhode Island, and only one from Maine and New Hampshire were included. Primarily, this imbalance derives from the inequity in number of facilities across states--perhaps driven by population--rather than the selection process.

An overwhelming majority, 80%, of campuses follow the cottage plan. Slightly more than half, 13 of 20, boast a listing on the National Register of Historic Places. Considerable variation in size exists, both in terms of area of the campus and the number of buildings within the complex. The smallest site covers only 30 acres, while the largest exceeds 1500. The average parcel size measures approximately 476 acres. The number of buildings ranges from 20 to 100. The average number of buildings is 43.

The range of the length of transition--from the closing date of the state hospital or state school until the new plans for the site are initiated-- is immense, spanning from three to forty years.

In most cases, a public agency--such as a Community Development Corporation, an Economic Development Corporation or a Redevelopment Authority--was involved in the reuse process to some capacity. In some cases, these organizations helped to shape the reuse plans or acted in an advisory/supervisory role. For a few sites, these organizations purchased the property from the states and held sole responsibility for the development.

Also widely common across the development processes are appointed reuse committees. The selection process of participants is often determined by the state legislature or town governments, which distinguish this type of organized group from volunteer collectives.

Citizen-based or volunteer reuse committees, advisory boards, working groups, etc. proved to be less common than either of the two formally organized groups. A citizen visioning group--the term this document will use to refer to such organization--was attached to slightly fewer than half of the facilities in the sample.

	STATE HOSPITALS	STATE SCHOOLS	INCLUDED IN SAMPLE
CONNECTICUT	4	14	3
MAINE	4	1	1
MASSACHUSETTS	16	7	11
NEW HAMPSHIRE	2	1	1
RHODE ISLAND	4	2	2
VERMONT	1	1	2
TOTAL	31	26	20

Table 4: Distribution of included sites across states.

Although each site is unique in its specific development outcomes, some patterns in reuse emerged. Roughly three-quarters of the plans for the campuses explicitly designated areas for open space, the most common land use. Institutional was also prevalent, with nearly two thirds of campuses occupied by a public organization. A high proportion, 60%, of the campuses underwent adaptive reuse to some degree. Affordable housing was less common, though still appeared in roughly a third of the population. Commercial development occurred as commonly as affordable housing. More often than not, the property was divided among multiple developers. On more than half of the sites, solely public or non-profit entities executed the redevelopment. Private developers were more common in the case of divided sites, however.

COMPARING FERNALD TO THE SAMPLE

Analyzing Fernald's characteristics relative to the other facilities in the sample reveals several similarities and differences of interest. Table 6 compares Fernald to the entire sample and to those sites locted in MA.

PREDICTIONS OF THE META-ANALYSIS IN RELATION TO FERNALD

The following discussion explores the relationship between potential outcomes and characteristics exhibited by Fernald. Certainly, these following associations do not suggest a definitive fate for Fernald, nor do they speak to the appropriateness of any outcome of interest for the site. It is important to remember that each campus, despite similar traits or circumstances, faces a unique and varied reuse process. The results of the meta-analysis, however, can help FWG to anticipate decisions that the reuse process will need

	MEAN	MIN	MAX
	SETTING		
POPULATION	23002.35	3966	80387
POPULATION DENSITY	1485.705	99.3	12791.9
MEDIAN HOUSEHOLD INCOME	62942	35810	99394
	CAMPUS		
ACREAGE	476	30	1500
NUMBER OF BUILDINGS	43	20	100
COTTAGE PLAN	80%		
NRHP LISTING	65%		
	PROCESS		
YEAR CLOSED	1991-1992	1971	2011
PUBLIC AGENCY/AUTHORITY	61.5%		
REUSE COMMITTEE	53%		
CITIZEN'S GROUP	44%		
	OUTCOMES		
ADAPTIVE REUSE	66%		
OPEN SPACE	71%		
AFFORDABLE HOUSING	53%		
INSTITUTIONAL/PUBLIC USE	65%		
COMMERCIAL	35%		
PROPERTY DIVIDED	62.5%		
PRIVATE DEVELOPER	39%		
YEARS IN TRANSITION	12.3	3	40

Table 5: Descriptive statistics.

	MEDIAN INCOME	POP.	POP. DENSITY	COTTAGE PLAN	NRHP	ACRES	NO. OF BUILDINGS	PUBLIC AGENCY	REUSE COMM.	CITIZEN GROUP
FERNALD	$68,326	60,632	4,763	yes	yes	196	72	no	yes	yes
MASS. AVERAGE	$69,105	23,439	2,278	.73	.91	391	46	.75	.56	.5
SAMPLE AVERAGE	$62,942	23,002	1,486	.8	.65	476	43	.62	.53	.44

Table 6: Fernald vs. Means for Sample and MA.

to address that stem from Fernald's qualities. We report here only those relationships that we can support statistically and postulate channels of influence for these associations .

In terms of location, Waltham is significantly more populous and more dense than the settings of other hospitals. Only four of the included sites in the sample are considered urban by US Census standards, that is have a population density of 1,000 people per square mile or higher. Waltham's median income exceeds the average of our sample by just over $5,000.

- Both population and population density increases the likelihood of a private developer. Since larger towns and cities tend to have more economic activity, private developers may take more notice of sites in these more populous areas.
- Population density increased the likelihood of affordable housing. Housing prices tend to be higher in urban areas, which may influence the necessity of providing this service.
- Higher median incomes slightly decreases the likelihood of adaptive reuse, affordable housing, and commercial use.

Like the majority of the sites, Fernald follows a cottage plan and is listed on the NRHP.

- A NRHP listing is associated with higher likelihood of affordable housing. This correlation may be driven by the existence of tax incentives for both preservation (HTC) and creation of affordable housing. Using these credits in conjunction greatly contributes to the feasibility of these projects (Rypkema 1994).
- A property with an NRHP listing is more likely to be divided among multiple developers and is more likely to be developed by a private entity.
- A property with an NRHP listing is more likely to be used in an institutional manner.

	ADAPTIVE REUSE	AFFORDABLE HOUSING	COMMERCIAL USE	INTSITUTIONAL USE	OPEN SPACE	PRIVATE DEVELOPER	PROPERTY DIVIDED	YEARS IN TRANSITION	REDEVELOP. AUTHORITY	CITIZEN GROUP	REUSE COMMITTEE
POPULATION						+			+		+
POPULATION DENSITY		+				+ +				+	+
MEDIAN INCOME	-	-	-					+			+
ACREAGE		-				- -		- -		-	
NO. OF BUILDINGS		+	+	+		+	+	+ +		+ +	
COTTAGE PLAN	-	- -			-	-	-			-	
NRHP		+		+		+	+ +				
REDEVELOP. AUTHORITY	-	-		+		- -		+ +			
CITIZEN GROUP	+ +	+ +		+ +	+	+					
REUSE COMMITTEE					+ +			-			

Table 7: Correlation matrix.

- Cottage plans are less likely to be used as open space. This may be due to the number of buildings, which may cover a significant portion of the parcel. Creating open space on a cottage plan campus requires more demolition and clearing work.

- Cottage plans, however, are less likely to transition to affordable housing.

- Cottage plans are less likely to be developed by a private developer.

The parcel that Fernald occupies is relatively small. In fact, three-quarters of the campuses in the sample exceed its area. In terms of number of buildings, however, Fernald's stock dwarfs all but one site. While this relation may seem odd intuitively, a negative correlation between number of buildings and acreage exists within the sample. This could be a result of population pressures. Settings with less land to spare may have required greater capacity.

- Smaller parcels are more often developed by private entities. Larger parcels may garner more concern from local government or other public entities, who may reluctantly step in as developers. The smaller parcels may represent less of a threat to the community and therefore may not encourage or necessitate public involvement.

- Campuses with larger numbers of buildings are more likely to be divided among multiple developers. Rehabbing or demolishing buildings represent a significant cost to the future developer. As costs increase with the number of structures, with more buildings developers may anticipate lower profits and are thus less interested in buying the entire parcel.

- Affordable housing is more commonly introduced on campuses with high numbers of buildings.
- A word of caution concerning spurious associations must be introduced here. Given that much higher number of structures are associated with cottage plans, relative to Kirkbride plans, we would expect to see similar relationships between outcome variables and cottage plans and outcomes and number of buildings. Our results indicate exactly the opposite, evidence that a third accounted for factor may be driving these associations.

Fernald boasts both an appointed reuse committee and a citizen visioning group. Although these organizations each formed in roughly half of the cases, only a quarter of all reuse processes involved both.

- The involvement of a citizen visioning group increased the likelihood of affordable housing. The efforts of the citizen visioning group may encourage decision makers to pay a more consideration to the needs and voices of the community. Affordable housing may be one of community needs that receives more attention and weight when a citizen group exists to advocate for this use.

- The involvement of a citizen visioning group increased the likelihood of open space. Like affordable housing, open space is widely considered a community need.

- The involvement of a citizen visioning group also increased the likelihood of adaptive reuse, the introduction of an institutional or public use, and the involvement of private developer.

- Sites for which a reuse committee was appointed suggests these sites are more likely to preserve some degree of open space.

- The length of the transition period for sites for which a reuse committee was appointed was shortened.

- The joint involvement of the two organizations did not significantly impact the likelihood of any particular outcome related to use or developer of the reuse process. The perhaps indicates a lack of cooperation or even disjoint between appointed reuse groups and citizen-based groups.

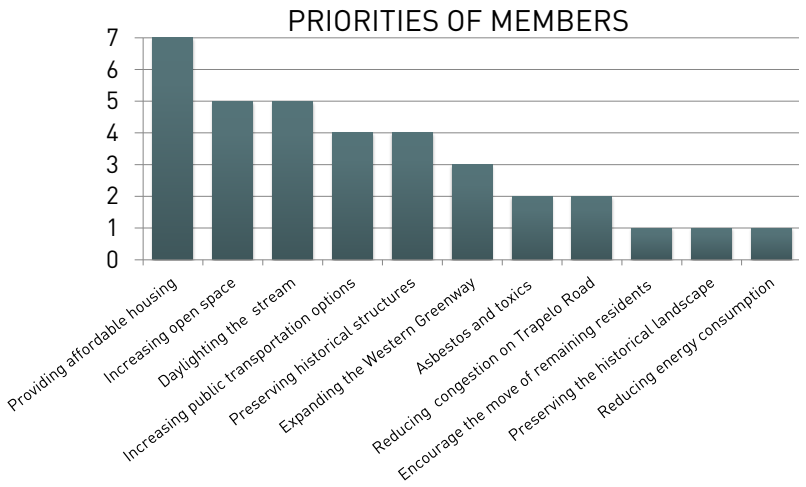


Figure 10: FWG survey results on member priorities.

VALUES AND INTERESTS OF STAKEHOLDERS

This section incorporates the results of both the survey we administered to FWG and the content of stakeholder interviews. Our analysis of this content helped the team identify the challenges and opportunities of integrating the Fernald into the surrounding community.

We report the complete results of the survey in Appendix F. Here, we discuss only the results that provide meaningful insight to the question of integration and those results that directly shaped and informed the structure of our interviews.

SURVEY RESULTS

The response to one survey question in particular underscores the importance of developing Fernald with consideration of the community needs. A multiple choice question asked participants to indicate the population that they envisioned Fernald serving in the future. Responses were largely similar across participants who, on a whole, seem to hope that Fernald will become an all inclusive and widely used resource. This aspiration highlights the importance of involving the wider Waltham community in the reuse process.

Achieving inclusive outcomes could be accomplished through flexibility in use, diversity of uses, or a combination of the two. The first approach, which centers on the potential for users to personally shape their experience with the site, underscores the value of flexible or unprogrammed open space. Creating open spaces represents a viable opportunity to ensure that Fernald indeed serves a broad and diverse population. Moreover, this objective, and in particular the Western Greenway, has attracted considerable support from organizations throughout Waltham. The results of the survey echo the FWG's belief in the potential of preserving open space at Fernald. Five of the survey participants named increasing public access to open space as one of the five most important objectives of the FWG.

Of all specific uses inquired about in the survey, the Western Greenway garnered the strongest and most wide-spread support; all participants expressed beliefs that it represented an appropriate use for Fernald. A few free response questions elaborated on the possibility. Five members viewed open space as the most realistically achievable, citing widespread political

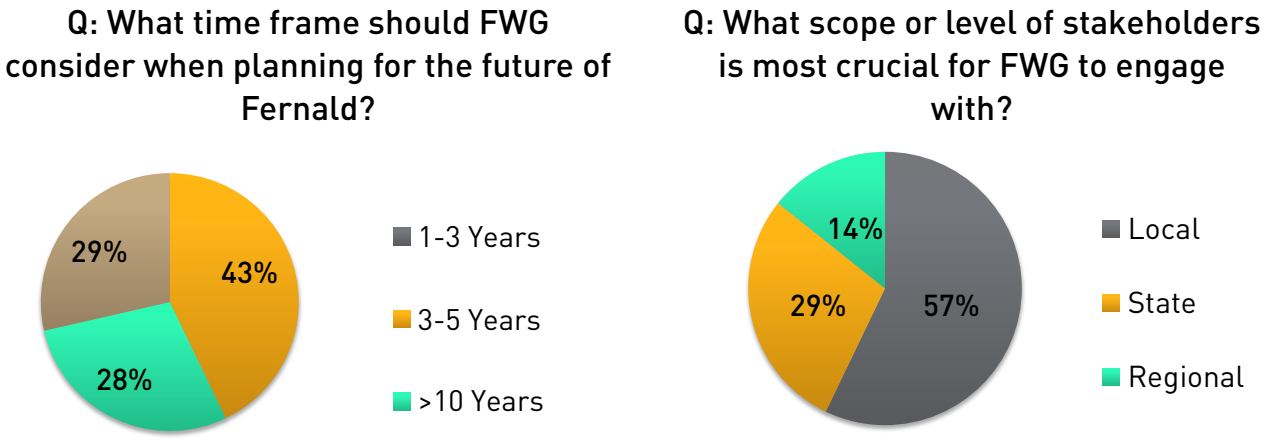


Figure 11: FWG survey results on time frame and type of stakeholder.

support, ease of implementation, and low maintenance. One member also identified open space as the most promising objective, arguing that, "People have lost connection with the environment. It is important for people to see spaces that are not controlled by humans."

The second method for encouraging inclusivity--diversity of use--could be driven by a mixed use village plan, a concept that FWG has also previously expressed interest in. Implementing this, however, may incur more complications than the existence of unified FWG support for the idea suggests. The results of the survey indicate that while the objectives and vision of the FWG may be broad, the preferred means to achieving their goals are more narrow. The survey responses reveal that on some specific issues, disagreement exists among the participants, who, it bears repeating, number only seven and have openly voiced agreement and support for a shared vision. Soliciting information and involving the community in the planning process, as is desired by FWG, will only increase the dispersion of opinions and may reveal further conflicts in values and priorities.

Particularly illustrative of the complexity of opinion surrounding the use of the site was a Likert-type question on the survey. Possible uses for the future of Fernald were organized under seven major categories (Residential, Agricultural, Commercial, Recreation/Open Space, Social Services, Treatment for the Disabled and Education). Participants were asked to sort these possible uses according to their level of agreement that they were appropriate to

the site and community of Waltham. Especially in the case of private uses, such as residential and commercial, the dispersion of the responses reveal specific preferences of members that are at odds with one another.

For instance, FWG members responded very differently to various residential uses. Participants, on a whole, did not support single family homes, but many were also cautious of multi-family or high density residential development. In fact, responses indicated significant dispersion of opinions surrounding multi-family living. The median response to this use was neutral, but the range of responses covered the entire scale with modes of two at both agree and neither agree nor disagree. In sum, multi-family/high-density residences represents the most contentious issue among the participants. Participants seem to favor balance in the issue of housing; a mixed income development garnered the most support of the category. All participants agreed or strongly agreed that Fernald was well suited to this use.

Affordable housing represents one of FWG's central objectives, but some participants' comments revealed some concern related to the community of Waltham's views on the issue. One participant noted that, "There is a general negative attitude in Waltham and many other communities around the concept of community housing. Many people equate community housing with public housing projects that seems to perpetuate poverty." Another cautioned that, "Housing should be mixed income so that no stigma is associated with living there." Some effort will be required to solidify the role that affordable housing could assume on the site and tactics for easing any community reluctance on the issue.

Another tenet of the FWG vision is the stimulation of small business, which a majority of respondents also expressed support for through the survey. Small business can assume many forms such as research, retail and light industry. Perhaps a limitation of the question design in the survey, the question remains whether the types of small business that could occupy Fernald matters. Only the explicitly termed small business option was viewed favorably on a whole within the category of Commercial Development. Light industry split the participants, as it attracted significant support but also significant opposition. The mode and median, however, reflected agreement. Retail similarly reflects differing opinions on its appropriateness. A majority favored it, but the opinions ranged from strongly agree to disagree. No strong support was shown for research or commercial activities. In the latter case, more outrightly opposed than supported it.

Though related more so to planning for the process than to the act itself, additional challenges may arise in the formulation of logistics and strategy in relation to FWG championing their vision for the site. Significant disagreement seems to exist on the issues of time frame and stakeholders.

For one question related to stakeholder engagement, three possible answers were provided: local, state, and regional. Participants were allowed to select only one. The modal choice was local, which four participants selected. State stakeholders were selected by two and the remaining participant picked regional. Though a majority agreed on local stakeholders, these results do suggest some divergence among the group on this issue. An open-ended question that asked participants to identify the stakeholders they viewed as most critical to engage reiterates the diversity of members' views on the

subject. Several participants focused on Waltham, though their responses carefully differentiated the community from the city government. Direct abutters (such as Bentley University, the Girl Scouts, University of Massachusetts and the Gann Academy) and neighboring residents each received mention by a participant. However, other responses favored engaging with state government or the governor.

The final question in the survey inquired about the time frame that participants believed FWG should consider when planning for Fernald. Significant discord emerged in the responses. Of the five periods offered--less than one year, one to three, three to five, five to ten, and more than 10 years--answers pooled roughly equally into just three: one to three, three to five, and more than 10 years.

INTERVIEWEE	OPEN SPACE	AFFORDABLE HOUSEING	SMALL BUSINESS	TRANSPORTATION ORIENTED DEVELOPMENT	DAYLIGHT STREAM	PRESERVATION OF SERVICES	COMMUNITY SERVICES	PRESERVATION OF HISTORIC BUILDINGS	TRAFFIC MANAGEMENT	BROWNFIELD RESTORATION
1	Yes	N/A	Yes	N/A	N/A	N/A	N/A	N/A	Yes	N/A
2	Yes	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
3	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Yes	No	No	Yes	Yes	N/A	N/A	N/A	Yes	Yes
5	Yes	No	No	N/A	Yes	Yes	No	Yes	Yes	Yes
6	Yes	Yes	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A
7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Stakeholder interests.

INTERVIEW RESULTS

Of the eight stakeholders interviewed, five represent local interests and three regional interests. In this instance, local interests are defined as attitudes and opinions that reflect a primary concern for the Waltham community. Regional interests are defined as attitudes and opinions that reflect a concern for communities, organizations or projects inclusive of Waltham, but where the broader interests of surrounding communities are of equal or greater importance.

The results of the interviews are summarized in Tables 8 and 9. The following visual representation of our stakeholder interviews allows for a quick interpretation of these common themes.

Our analysis of stakeholder interviews indicates that the preservation of open space is the most prevalent interest and was positively identified by all stakeholders. (Table 10) The more specific interests of daylighting the stream and the removal of contamination from the site, which are related to the preservation of open space, received equal support from regional and local stakeholders and were tied with traffic management as the next most cited issue. Traffic management along Trapelo and Waverley Oaks Roads received more attention from local stakeholders, but was still cited as a major concern by two of the three regional stakeholders.

INTERVIEWEE	SUSTAINABLE DEVELOPMENT	COMMUNITY PARTICIPATION	PROACTIVE & POSITIVE PROCESS
1	N/A	Yes	N/A
2	Yes	N/A	N/A
3	Yes	Yes	Yes
4	Yes	N/A	N/A
5	N/A	Yes	Yes
6	N/A	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes

Table 9: Stakeholder values.

The preservation of the historic resources on the site was ranked next as the most cited interest, but was overwhelming a greater concern to local stakeholders. Bringing more public transportation options to North Waltham, either as a goal in and of itself or as a prerequisite for any further development in the area, was cited by half of all stakeholders. Preservation of services for the developmentally disabled at the Fernald site was also mentioned by half of all stakeholders, but was primarily a concern for Waltham stakeholders.

Finally, the creation of new community services, affordable housing and opportunities for small business growth all received about equal attention as important and positive goals, but almost exclusively from local stakeholders. Interestingly these are the only three interests which were explicitly cited with negative support (Table 11). Affordable housing and the creation of small businesses were cited equally with positive and negative support, though it should be noted that two out of the three regional stakeholders expressed negative support for these interests while only one local stakeholder specifically opposed them.

All three values identified in this study were positively cited by the majority of stakeholders (Table 12). Community participation ranked first and was cited by all local stakeholders and all but one regional stakeholder. The desire for a proactive and positive reuse process, as opposed to a technical process that relies on the procedural development of proposals and public reaction to them, received broad attention, but were more commonly cited among local stakeholders. Two interviewees adamantly expressed the keen interest of Waltham residents to involve themselves in a reuse project such as Fernald. Lastly, the principles of sustainable development were cited by all of the regional stakeholders but only two of the local ones.

RANK OF INTERESTS BY POSITIVE SUPPORT

RANK	INTEREST	SUPPORTIVE		
		REGIONAL	LOCAL	TOTAL
1	Open Space	3	5	8
2	Daylight Stream	3	3	6
2	Brownfield Restoration	3	3	6
2	Traffic Management	2	4	6
3	Preservation of Historic Buildings	1	4	5
4	Transportation Oriented Development	2	2	4
4	Preservation of Services	1	3	4
5	Community Services	1	2	3
5	Affordable Housing	0	3	3
5	Small Business	0	3	3

Table 10: Rank of interests by positive support.

RANK OF INTERESTS BY NEGATIVE SUPPORT

RANK	INTEREST	NOT SUPPORTIVE		
		REGIONAL	LOCAL	TOTAL
1	Affordable Housing	2	1	3
1	Small Business	2	1	3
2	Community Services	0	1	1

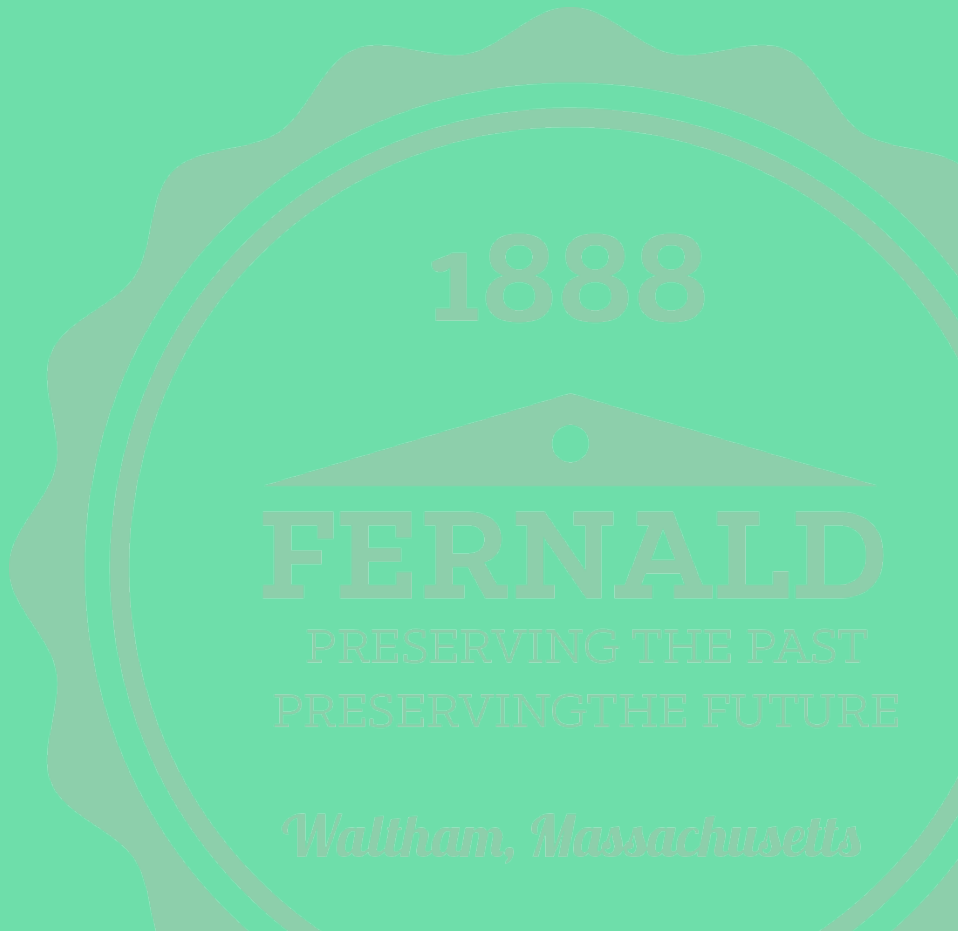
Table 11: Rank of interests by negative support.

RANK OF POSITIVELY IDENTIFIED VALUES

RANK	VALUES	POSITIVELY IDENTIFIED		
		REGIONAL	LOCAL	TOTAL
1	Community Participation	2	5	7
1	Proactive & Positive Process	2	4	6
2	Sustainable Development	3	2	5

Table 12: Rank of positively identified values.

7. CONCLUSIONS



THE REUSE PROCESS

The reuse process can be lengthy. The average length of the transition time in our meta-analysis data exceeded 13 years. Moreover, tumult and obstacles beleaguer the process. Developers, both public and private, pull out of projects. For example in Westboro, Massachusetts, MassDevelopment unveiled plans for a mixed use community in the early 2000s only to see the project fall through a few years later. The property has since been divided into smaller parcels and sold piecemeal to private real estate investors with no immediate plans for the site. In addition, costs can prove too high for project completion. For example, at Foxborough two of the three initial developers, Vinco and Intoccia, filed for bankruptcy. But this point is cautionary more than foreboding. Many of the included sites in our sample boast successful reuse and redevelopment.

Purchase of state surplus property by a local municipality also doesn't guarantee timely development. Indeed, such a transfer may initiate a new development process. For instance, the city of Preston, Conn., now seeks a buyer for parcel that it purchased from the state of Connecticut in 2009. In Belchertown, Mass., the municipality established a quasi-governmental body, the Belchertown Economic Development and Industrial Corporation, in the early 2000's specifically for the purpose of redeveloping the Belchertown State School. The property, however, remains predominantly vacant. The transfer of the property from its state control is just the first hurdle to overcome.

The interviews and supporting research also support the the idea that the process of surplusing and developing a viable reuse plan for large state owned parcels is typically a lengthy one. Attempts to reconcile state and local interests simultaneously can complicate a process that would likely be lengthy even if local authorities had full planning authority, and recommendations to limit the state's authority in the redevelopment of these sites in favor of locally driven development process have been suggested elsewhere (MAPC 2005). The complex nature of the these large parcels requires that both broad community interests be considered alongside the application of specific technical planning skills. To the extent that the city of Waltham would control the development of Fernald according to local zoning and land use ordinances has never been in question, but both the interviews and an examination of existing state legislation revealed a considerable amount of confusion regarding the status of the city in the reuse process and the extent to which it might be required to compete directly with private developers if anything other than a direct public use was desired for the property. We encountered a general desire on the part of local stakeholders that the city drive the planning and reuse process, and, again, attitudes to the effect that if and when the city gains control of the site the reuse process will begin anew.

We did not encounter another example of a state disposition process in which the activities of a reuse committee or citizen group commenced prior to the property in question being surplused. Fernald remained in operation during the course of this study, at which time reuse activities, both official and citizen led, had been ongoing for approximately ten years. This supports that the value of a proactive and positive reuse

process is prevalent in the Waltham community alongside the desire for greater public participation in the reuse and planning processes. In addition, we encountered a mix of admiration and frustration among several stakeholders regarding municipal operations. On the one hand some stakeholders applauded the local government for its fiscal management, lack of controversy, and strategic use of resources, while on the other hand expressed concern over an apparent lack of access and transparency. This suggests that there may be an opportunity for the city to engage a resourceful, amicable and willing public in a productive reuse model that could enhance the standard regulatory process, perhaps shortening the time in which new plans for the Fernald site are realized.

The unofficial announcement of a proposed "sale partnership model" on March 26, 2014, suggests that three Massachusetts municipalities will assume control of a reuse process while protecting the state's ability to share in revenues generated through the future sale and development of three large state parcels. Some stakeholders acknowledged this as an innovative solution to a cumbersome process, but it was also suggested that this could limit the potential for representing regional interests. Our limited study suggests that the significant time, thought and effort that has been applied to Fernald in the past ten years has already succeeded in generating consensus around particular interests and values, and that the challenges of a new process will stem from how the city decides to engage the past activities of the state reuse process with a new one that incorporates the ongoing interests and concerns of citizens and community advocates.

OUTCOMES

Our results suggest that the presence of existing uses and institutions, and the involvement of certain organizations does impact reuse outcomes. Our meta-analysis results suggest that a quasi-governmental authority decreases the likelihood of affordable housing and adaptive reuse, while increasing the likelihood of institutional use. A quasi-governmental authority is associated with a lower likelihood of a private developer -- as in some cases the authority acts as the developer. The involvement of this type of organization also increases the length of the transition time. A reuse committee, in contrast, may reduce the time in transition according to our results. A reuse committee additionally increases the use of the campus for open space, as does the involvement of a volunteer citizen group. A volunteer citizen group's work is associated with higher likelihoods of affordable housing, adaptive reuse, and institutional use as well.

But, physicalities--such as size and plan--may also determine outcomes. In fact, the number of buildings influences a majority of our outcome variables. A higher number is associated with a higher likelihood of affordable housing, institutional use, and commercial use, as well as a higher likelihood of subdivision and a private developer. Years in transition, too, increases with a cottage plan. As acreage is negatively correlated with the number of buildings in our sample, the size of the parcel is similarly negatively related to several of the outcomes associated with a large number of buildings. External factors such as population and population density shape eventual outcomes. The likelihood of affordable housing increases with population density. Both a higher density and the population count increase the likelihood of a private developer. In sum, a combination of physical, social, and political factors influence reuse outcomes.

FWG's vision incorporates several common uses that were successfully implemented in past reuse plans. Adaptive reuse and open space are now present on more than half of sites. In campuses in MA affordable housing, too, occupies a majority of campuses. Commercial use, however, and in particular small business, is less common. However, this use is still present on nearly a third of all sites. Moreover, mixed use, which FWG supports, can be an effective and successful land use strategy. This pattern of development is widely prevalent in our sample and takes many forms. For some sites, mixed use simply means affordable housing and some small scale commercial development. Contrastingly, in the interesting and flourishing case of the former Brandon State School, the mixed use development included not simply residences and businesses, but an arts center and gallery, a small museum to the school, a yarn factory space and an alpaca farm.

Transferring the campus from one institutional use to another--not an outcome championed in the FWG vision statement--is not uncommon. In fact, institutional uses occur on 13 of 20 sites in our sample. One example, in Meredith, NH at the prior Laconia State Hospital, three buildings currently serve Lakes Region Mutual Fire Aid Association, NH Dept. of Health and Human Services occupies other structures and sex offender incarceration also is present on site. The Mansfield Training Center in CT once bordered, and has since partially been subsumed into a University of Connecticut campus. Academic activities on site now include environmental research, a community-based school of arts in a cottage, and dormitories for international students. Some additional land was annexed to Bergin Correctional Facilities, a CT Department of Correction training center and minimum security prison. Additionally, several institutions now sit on the previous Grafton State Hospital land in Grafton, MA, including the Tufts Cummings School of Veterinary Medicine and Grafton Jobs Corporation facilities. Perhaps the scale of the campuses appeals to larger organizations. Or, perhaps these organizations act first. A negative association between time in transition and institutional use emerged in our sample.

Our interview results show that there is broad consensus over the preservation of open space at Fernald and an interest in expanding access to the site though the extension of the Western Greenway. Accompanying this are interests related to the restoration of the natural resources on the site. There is broad support for the remediation of the hazardous materials in association with the existing oil power plant, the asbestos insulation on the steam distribution piping, and the lead and asbestos building materials in many of the existing structures. These are perceived as important first steps not only for the safe enjoyment of the natural resources on the site, but also for the stabilization, preservation, and eventual reuse of the historic structures. There is also broad support for removing the cottage style housing on the Northwest portion of the site and exposing and restoring the stream beneath. Stakeholders mentioned how this could contribute to the public enjoyment of the site, especially in conjunction with the Western Greenway, but also how it could restore traditional water flows, reducing runoff and the flooding of adjacent properties, and increasing the site's ability to process stormwater and limit the effects downstream in the Charles River watershed.

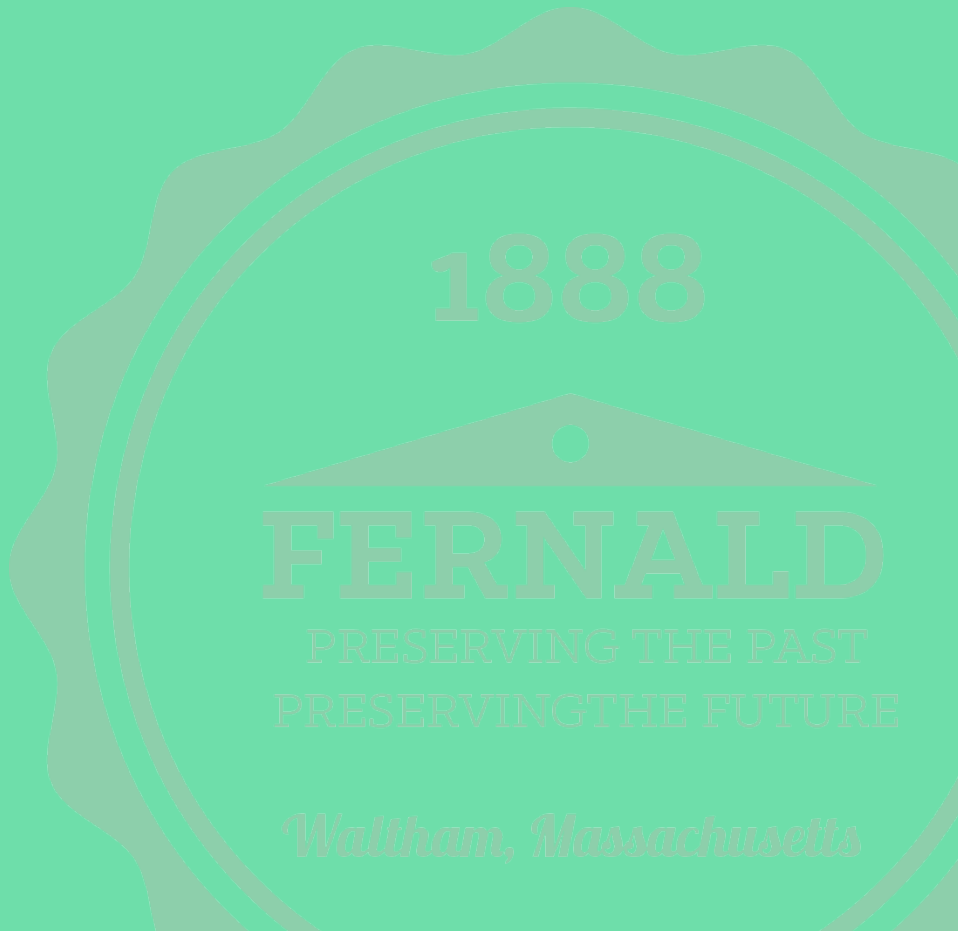
Reducing and maintaining current traffic flows around the Fernald site was the next most cited issue. While there was overall consensus regarding an interest to prevent any activity that would increase traffic, there was less consensus on how to achieve that in relation to the opportunities presented through the reuse of the Fernald site. While some stakeholders explicitly drew the connection between their support for preserving open space (and in some cases, their opposition to housing or other development), at least two stakeholders viewed the opportunity for development at Fernald as a way to leverage more public transportation for North Waltham, creating a transportation hub at the site that could service the entire area more efficiently than current MBTA service provides.

Interestingly, we found broad agreement among local stakeholders concerning the preservation of the historic resources on the site, but this was not necessarily accompanied with suggestions for their reuse or support for development on the site. The historic structures on the site represent approximately 700,000 square feet of developable space (DCAM 2011), and while it can be assumed that a significant portion of this number represents structures that either cannot be salvaged or are otherwise unfit for rehabilitation, it can also be assumed that appropriate uses will have to be identified for the long-term security and viability of these resources. When specifically asked what uses stakeholders might want to see, suggestions included a museum to commemorate the residents, patients, and students at Fernald, limited senior and veteran's housing, small businesses, and affordable housing. There was little mention of cultural amenities, and one interviewee specifically mentioned the desire to avoid development that might attract visitors from outside the area.

Affordable housing was clearly the most contentious potential reuse scenario for the site. In all three instances of local stakeholder support, affordable housing was cited as necessary to fulfill a present need in the Waltham community and that families with long histories in Waltham are concerned that their children may not be able to afford to live in the city in the near future. It is worth noting that all support of affordable housing was in the context of mixed-income development and the reuse of historic buildings or their footprints. In no instance did a stakeholder advocate for dedicated low-income development or support the construction large housing complexes on the site. In two out of three instances where there was explicit opposition to affordable housing, the stakeholders made a distinction between their general support for affordable housing in general a belief that the general public equates affordable housing with low-income housing projects, suggesting that there would be widespread opposition to affordable housing at Fernald. This also suggests that there is potential for greater consensus on housing scenarios that focus attention on the adaptive reuse of the historic structures within mixed-use and mixed-income development. Affordable housing appears to be a hot button issue that obscures a larger conversation about community and housing preservation, and how the Fernald site may have the potential to address these values in a manner that addresses other interests for which there is broad consensus.

The values identified in this study were consistently reinforced in the interviews. The importance of public participation was explicitly cited as an essential component of a legitimate planning process. This attitude was closely related to an expressed desire to be proactive and positive; to craft a process around community interests and values as opposed to strategizing ways to respond to a process already underway. This was evident in the value that many stakeholders placed in both community activism and the work of the foral reuse committee. However, there is some question regarding the extent to which the past activities of the Fernald Reuse Committee might be invoked to satisfy the procedural requirements of a new reuse process. The values of sustainable development (SD), which seeks to balance economic, social and environmental concerns, were evident in many of the stakeholder responses, but it was clear that different stakeholders were often applying the principles in different ways and in at different levels. While some the potential to incorporate all three SD principles on the Fernald site, some saw the site as a smaller component in applying SD principles at a citywide or regional level, or both.

8. RECOMMENDATIONS



"No matter how good an agreement is by some standards, if it was reached by a process that was not regarded as fair, open, inclusive, accountable, or otherwise legitimate, it is unlikely to receive support."

-Judith Innes & David Booher, 1999

Any reuse process should recognize that a number and diversity of factors are at play. Beyond the involvement of specific organizations, the physical traits of the site and surrounding land uses will also play a role in determining Fernald's ultimate use(s). We believe that FWG's vision reflects a deep and long studied understanding of the greater Waltham community, but care should be taken to ensure that the group's objectives reflect a recognition of the physical influences and limitations of the site. While the large number of historic buildings certainly constitutes a valuable set of historic assets, the dispersion of the structures coupled with the number of structures that are neither salvageable nor historic also present a challenge to their reuse. Specifically, the number of structures may increase costs related to either preservation or demolition, which may negatively influence the creation of open space or the implementation of any number of adaptive reuse scenarios.

We recommend that FWG strive for greater consensus within their own group and continue to build relationships among other influential stakeholders in municipal government, the greater Waltham community, and beyond. Within their own group, the survey revealed that members did not agree on some logistical issues. Namely, which stakeholders to engage and the timeframe in which to set goals and formulate tasks. With the impending sale partnership model, the efficient development and execution of next steps for the work of FWG will likely contribute to how successful they are in attracting the attention of others and establishing a productive dialogue that can influence the planning process. FWG could benefit from a conversation that explicitly identifies the individuals and organizations that the FWG would like to devote resources to and develop partnerships with. Secondly, FWG might also benefit from determining an appropriate timeframe to meet their immediate goals. A plan for the next three years will differ significantly from a ten year plan, and the length of time that FWG chooses to implement its next course of action will invariably affect the structure and magnitude of their initiatives.

We recommend that FWG give greater consideration to institutional stakeholders. Institutional uses proved to be among the most common uses of sites included in our meta-analysis. In many cases, the institutions that occupied the parcel after disposition were local. Several institutions currently abut Fernald, including Bentley College, the Girls Scouts of America, and the Gann Academy. Due to the number of existing institutional neighbors around the Fernald property we believe FWG should seek to better understand their views of Fernald and it's future. FWG has expressed little to no support for institutional uses in their vision statement, and yet the potential resources available to neighboring institutions may guarantee them a place at the table and a sympathetic ear. Though it is unknown to us what extent the FWG has actively sought to engage with local institutions, we recommend such institutions not be considered a threat, but be engaged in dialogue as potential allies in determining Fernald's future.

We recommend that FWG articulate the values that inform their vision and explicitly connect them with the interests and values of other stakeholders. Reframing the vision away from a specific version of the future toward a set of conditions that could intersect broader community interests may allow other stakeholders to envision a Fernald they can better identify with. In addition, this has the potential to free the FWG from specific perceived interests, as some stakeholders expressed a concern that the FWG was a veil for other organizations and interest groups. Though limited, this study indicates that SD values embedded in FWG's vision, such as community engagement, providing for the social and transportation needs of the greater Waltham community, and reducing the potential for stress on the neighborhoods surrounding Fernald, all have the potential resonate with a broad audience.

Finally, we recommend that FWG pay more attention to the formal process that will govern the planning for the site at the municipal level and seek ways to enhance it. It is clear to us that FWG is attempting to do more than simply express a preference for certain outcomes, but rather establish a positive rethinking of the possibilities at Fernald with the goal of influencing the planning process itself. Engaging a broader coalition of stakeholders, as recommended above, could help establish FWG as a potent and inclusive community organizer, but the process through which it influences the outcomes at Fernald will depend largely on how government officials perceive FWG and the extent to which they are willing to extend standard procedures to explore a larger conversation and more possibilities. This represents a risk, and to the extent that it can be demonstrated that such a modified process can work and is preferable to standard procedures alone, we believe that there exists a potential for enhanced outcomes. There are established collaborative planning models that have developed significant track records with supporting literature, case studies, and organizational capacity (Innes and Booher 1999, 2010; Nolon et al. 2013). The Mutual Gains Approach, as described by Nolon, et al. (2013) was specifically designed to help decision makers resolve complex land use issues that involve multiple stakeholders when there will be long-term and far reaching impacts on the community and landscape, and when there is likely to be a challenge to outcomes that are not arrived at collectively.

APPENDIX A: REFERENCES

"Development Pressures Mount in Westchester: [New York Hospital, White Plains]." 1984.Preservation League of New York State Newsletter 10 (o.4): 1.

"Economic Development and Industry." Town of Belchertown, accessed 4/2, 2014, http://www.belchertown.org/residents/towninfo/Web_BEL_ECON_DEV_AND_INDL_CORP.htm.

"Fairfield State Hospital.", fairfieldstatehospital.com.
"For Sale-Prime Development Opportunity." Preston Riverwalk, Jones Lang LaSalle, accessed 4/2, 2014.

"Timeline." Northampton State Hospital, accessed 4/2, 2014, http://northamptonstatehospital.com/history/timeline/.

Abbott, Elizabeth. 2009. "A Rhode Island School, Reborn." The New York Times, May 5, 2009, 87.

Ansberry, Clare. 2013. "At Nation's Oldest Institution for the Disabled , 13 Lives in Limbo." Wall Street Journal Abstracts, June 29, 1.

Arnstein, Sherry R. 1969. "A Ladder of Citizen Participation." Journal of the American Institute of Planners 35 (4): 216-224.

Arrington, Benjamin T. ""Industry and Economy during the CIvil War." National Park Service, Http://www.Nps.gov/resources/story.Htm?id=251 (Accessed March 25, 2014)."

Askin, Timothy B. 2010. "Oregon's Forgotten Public Social Welfare Institutions: The Oregon State Hospital and the Multnomah County Poor Farm as Case Studies in the Challenge of Preserving Stigmatized Places." (Journal Article).

Bailey, John and Cheryl Little. 2004. Vacant Properties and Smart Growth: Creating Opportunity from Abandonment Funders' Network for Smart Growth and Livable Communities.

Beam, Alex. 2009. Gracefully Insane: The Rise and Fall of America's Premier Mental Hospital PublicAffairs Store.

Boynton, Donna. 2011. "Lyman School Sites in Westboro Net $1.06M." Worcester Telegraph & Gazette, July 27, 2011.

———. 2013. "Westboro in Unique Deal for State Hospital ." Worcester Telegraph & Gazette, August 21, 2013.

Brody, Samuel D., David R. Godschalk, and Raymond J.

Burby. 2003. "Mandating Citizen Participation in Plan Making: Six Strategic Planning Choices." Journal of the American Planning Association 69 (3): 245-264.

Bullen, Peter A. and Peter ED Love. 2010. "The Rhetoric of Adaptive Reuse Or Reality of Demolition: Views from the Field." Cities 27 (4): 215-224.

Bullen, Peter and Peter Love. 2011. "A New Future for the Past: A Model for Adaptive Reuse Decision-Making." Built Environment Project and Asset Management 1 (1): 32-44.

Bunnell, Gene. 1992. "The Importance of Comprehensive Planning for the Reuse of Mental Hospital Properties: Lessons Learned in Massachusettes and Connecticut." In Changing Places: Remaking Institutional Buildings, edited by Lynda H. Schneekloth, Marcia F. Feuerstein and Barbara A. Campagna, 224-225-245. Fredonia, New York: White Pine Press.

Burchell, Robert W. and David Listokin. 1981. The Adaptive Reuse Handbook: Procedures to Inventory, Control, Manage, and Reemploy Surplus Municipal Properties. New Brunswick, NJ: The Center for Urban Policy Research.

Bureau,Nancy Reardon, Patriot Ledger State House. 2009. "INSTITUTIONALIZED OR INDEPENDENT?" Debate Over Housing for Disabled Divides Families, Advocacy Groups; A Place to Call Home." The Patriot Ledger (Quincy, MA), April 7.

Burghdoff, Dana Louise. 1994.Metropolitan State Hospital--an Endeavor in Interlocal Planning.

Burrillville Town Council. 2013. Policy and Legislative Agenda: 2013-2014 Goals and Objectives.

Campbell, Margaret. 2005. "What Tuberculosis did for Modernism: The Influence of a Curative Environment on Modernist Design and Architecture." Medical History 49 (4): 463-488.

Cantell, Sophie Francesca. 2005. "The Adaptive Reuse of Historic Industrial Buildings: Regulation Barriers, Best Practices and Case Studies ." Master of Urban and Regional Planning, Virginia Polytechnic Institute and State University.
City of Cranston, RI. "Historic Locations: The Boys Training School at Sockanosset.", accessed 4/2, , http://www.cranstonri.com/generalpage.php?page=112.

Commonwealth of Massachusetts, Executive Office for Administration & Finance, Division of Capital Asset Management and Maintenance (DCAMM), Carole Cornelison, Commissioner. 2011. "Report on the Real Property Owned and Leased by the Commonwealth of Massachusetts."

Commonwealth of Massachusetts, State Board of Lunacy and Charity (SBLC). "Tenth Annual Report, (Boston, 1889)."

Compagna, Barbara Anne. 1986.Adaptive Reuse Study of the Buffalo State Hospital, Designed by Henry Hobson Richardson (Journal Article).

Connor, Desmond M. 1988. "A New Ladder of Citizen Participation." National Civic Review 77 (3): 249-257.

Cunningham, Jan. 1987. National Register Off Historic Places Inventory: Mansfield Training School and Hospital: US

Department of the Interior: National Park Service.

Daly, Marie E. ""History of the Walter E. Fernald Development Center," City of Waltham, Http://www.City.Waltham.Ma.us/sites/walthamma/files/file/file/fernald_center_history.Pdf (Accessed January 17, 2014)."

Davidoff, Paul. 1965. "Advocacy and Pluralism in Planning." Journal of the American Institute of Planners 31 (4): 331-338.

Davis, Todd S. 2002. "Brownfields: A Comprehensive Guide to Redeveloping Contaminated Property."American Bar Association, .

De Sousa, Christopher A. 2004. "The Greening of Brownfields in American Cities." Journal of Environmental Planning and Management 47 (4): 579-600.

———. 2003. "Turning Brownfields into Green Space in the City of Toronto." Landscape and Urban Planning 62 (4): 181-198.

Dolan, Lawrence W. 1987. "Reuse of State Hospital Property, 1970–1985." Hospital & Community Psychiatry (Journal Article).

Dorsey, Joseph W. 2003. "Brownfields and Greenfields: The Intersection of Sustainable Development and Environmental Stewardship." Environmental Practice 5 (01): 69-76.

———. 2003. "Brownfields and Greenfields: The Intersection of Sustainable Development and Environmental Stewardship." Environmental Practice 5 (01): 69-76.

Downs, Anthony. 2005. "Smart Growth: Why we Discuss it More than we do it." Journal of the American Planning Association 71 (4): 367-378.

Fairfield Hills Master Plan Amendment Work Group. 2005.

Fairfield Hills 2005 Master Plan: Fairfield Hills Master Plan Ad Hoc Committee.

———. . 2012. Fairfield Hills Master Plan: Fairfield Hills Master Plan Ad Hoc Committee.

Fernald Working Group. "Reuse of the Fernald Center - A Community Vision." The Fernald Working Group., last modified April 1, 2014, accessed April 9, 2014, 2014, www.fernaldworkinggroup.org.

Flagg, Kathryn. 2013. "How the Former Brandon Training School Became a Thriving Village." Seven Days, June 19, 2013.

Freeman, Ali. 2013. "New Life for the Old Brandon Training School." Wcax, July 10, 2013.

Fregonese, John and C. J. Gabbe. 2011. "Chapter 8: Engaging the Public and Commjnicating Successfully in Reigonal Planning." In Regional Planning in America: Pratice and Prospect, edited by Ethan Seltzer and Armando Carbonell, 222. Cambridge, MA: Lincoln INstitue of Land Policy.

Gaber, John and Sharon Gaber. 2007. "Chapter 2: Field Research." In Qualitative Analysis for Policy and Planning: Beyond the Numbers, 17-44. Chicago, IL: Planners Press, American Planning Association.

Greenblatt, Milton and Elizabeth Glazier. 1976. "Some Major Issues in the Closing of the Hospitals." In State Mental Hospitals, 127-139: Springer.

Greenblatt, Milton, Richard H. York, and Esther Lucile Brown. 1955. "From Custodial to Therapeutic Patient Care in Mental Hospitals." (Journal Article).

Greenstein, Rosalind and Yesim Sungu-Eryilmaz, eds. 2004. Recycling the City: the use and Reuse of Urban Land.

Cambridge, MA: The Lincoln Institute of Land Policy.

Grow Smart Rhode Island. 2001. Grow Smart Rhode Island Policy Resolution of RIEDC's Redevelopment Plans for the Ladd Center.

Gruen, Michael S. 1980. "Reuse of Publicly-Owned Properties." Pace L.Rev. 1: 705.

Hammel, Lee. 2003. "Battle Begins to Save Hospital ; Supporters Marshaling for Hard Fight." Telegram & Gazette (Massachusetts), March 04.

Hammond, Bonny Marguerite. 1986. "The Indiana State Hospital Project: The Research and Documentation of Twenty-Eight Indiana State Hospital Structures." (Journal Article).

Hardman, Bryan Lee. 2004.A Piece of Mind: The Fate of the State-Funded Asylum of the Nineteenth Century (Journal Article).

Hawk, Roger, Stuart Arnett, William Flynn, Christoper Kennedy, and M. Hunter Ulf. 2012. A Public Policy Framework for Defining the Future for the Lakes Region Facility: The City of Laconia, New Hampshire.

Hawkins, Kenneth Blair. 1991. "The Therapeutic Landscape: Nature, Architecture, and Mind in Nineteenth-Century America." Ph.D., The University of Rochester.

Hogan, Michael P. 2003. "MassDevelopment: Leveraging Public/Private Partnerships." City and Town, January 2003, 1-7.

Hollander, Justin B. 2012. "Intelligent Participation: Engaging Citizens through a Framework of Multiple Intelligences." Community Development 43 (3): 346-360.

———. 2009. Polluted & Dangerous: America's Worst Abandoned Properties and what can be done about them UPNE.

Hollander, Justin B., Niall G. Kirkwood, and Julia L. Gold. 2010. Principles of Brownfield Regeneration: Cleanup, Design, and Reuse of Derelict Land. Washington, D.C.: Island Press.

Hollander, Justin, Niall Kirkwood, and Julia Gold. 2010. Principles of Brownfield Regeneration: Cleanup, Design, and Reuse of Derelict Land Island Press.

Innes, Judith E. and David E. Booher. 1999. "Consensus Building and Complex Adaptive Systems: A Framework for Evaluating Collaborative Planning." Journal of the American Planning Association 65 (4): 412-423.

———. 2010. Planning with Complexity: An Introduction to Collaborative Rationality for Public Policy Routledge.

Jackson, Mike. 1995. "Changing Places: Remaking Institutional Buildings." Journal of Architectural Education 48 (4): 271-272.

Joseph, Alun E., Robin A. Kearns, and Graham Moon. 2009. "Recycling Former Psychiatric Hospitals in New Zealand:

Echoes of Deinstitutionalisation and Restructuring." Health & Place 15 (1): 79-87.

Joseph, Alun, Robin Kearns, and Graham Moon. 2013. "Re-Imagining Psychiatric Asylum Spaces through Residential Redevelopment: Strategic Forgetting and Selective Remembrance." Housing Studies 28 (1): 135-153.

Kneeland, Timothy W. 2004.Gracefully Insane: The Rise and Fall of America's Premier Mental Hospital.

Krieger Sieniewicz, Chan. 2013. Master Plan for the Richardson Olmsted Complex. Buffalo, NY: The Richardson Center Corporation.

Krumm, Janet. "The History of Laconia State School.", http://www.nhchallenge.net/article.asp?ID=277.

Kucik, Lisa M. 2004.Restoring Life: The Adaptive Reuse of a Sanatorium (Journal Article).

Kvale, Steinar. 2008. Doing Interviews Sage.

Mallach, Alan. 2006. Bringing Buildings Back: From Abandoned Properties to Community Assets. Montclair, New Jersey: National Housing Institute.

Mason, Randall. 2005. "Economics and Historic Preservation." Washington, DC: The Brookings Institution.

Massachusetts Health Policy Forum, The. 1999. "ISSUE BRIEF NO. 6: MENTAL HEALTH CARE IN MASSACHUSETTS, A Discussion Featuring Professor David A Rochefort, Laurie Ansorge Ball, Commissioner Marylou Sudders, Jessica Henderson Daniel, and Lisa Lambert." .

Massachusetts Historical Commission (MHC). "Application for Listing the Walter E. Fernald State School on the National Register for Historic Places, December 8, 1993. Http://www.City.Waltham.Ma.us/sites/walthamma/files/file/file/scannhrapplication.Pdf." .

MassAdubon. "Boston Nature Center & Wildlife Sanctuary.", accessed 4/2, 2014, http://www.massaudubon.org/get-outdoors/wildlife-sanctuaries/boston-nature-center/about.

McCarthy, Linda. 2002. "The Brownfield Dual Land-use Policy Challenge: Reducing Barriers to Private Redevelopment while Connecting Reuse to Broader Community Goals." Land use Policy 19 (4): 287-296.

Mechanic, David and David A. Rochefort. 1990. "Deinstitutionalization: An Appraisal of Reform." Annual Review of Sociology: 301-327.

Medfield State Hospital Vision. 2014. Summary of State Hospital Reuse Projects: Presentation for Jan 21 Visioning Workshop.

Megan, Kathleen. 1993. "Mansfield: End of an Institution." The Courant, January 31, 1993.

Merritt, Amy W. 2006.Redeveloping Greyfields: Definitions, Opportunities and Barriers.

Metropolitan Area Planning Council (MAPC). "Positive

Disposition: Crafting a Balanced Policy for the Sale of Surplussed State Property. 2005." .

Munoz, Sarah-Anne Munoz, Fiona Smith, and Amy Nimegeer. 2012. Hospital Grounds Reimagined: Facilitating Engagement with Hospital Grounds Greenspace Design, Development and Management for Health and Wellbeing. Inverness: Hospital Grounds Greenspace Project, Arts and Humanities Research Council, Scottish Funding Council, Forestry Commission and NHS Forth Valley.

National Park Service (NPS), U.S. department of the Interior, Technical Preservation Services. "Historic Preservation Tax Incentives. 2012. Http://www.Nps.gov/tps/tax-incentives/taxdocs/about-Tax-Incentives-2012.Pdf." .

Nemethy, Andrew. "'Going to Waterbury: An Elegy': A Closure Event for the Vermont State Hospital." Vermont Digger, accessed 4/2, 2014, http://vtdigger.org/2012/10/25/going-to-waterbury-an-elegy-a-closure-event-for-the-vermont-state-hospital/.

———. "Last Remnant of 1,500 Acre Vermont State Hospital to be Sold." Vermont Digger, accessed 4/2, 2014, http://vtdigger.org/2012/07/02/last-remnant-of-1500-acre-vermont-state-hospital-farm-to-be-sold/.

New Boston Fund. 2013. New Boston Fund's Olmsted Green Development Brings nearly $100 Million in Community Investment.

Newton, Peter W. 2010. "Beyond Greenfield and Brownfield: The Challenge of Regenerating Australia's Greyfield Suburbs." Built Environment 36 (1): 81-104.

———. 2010. "Beyond Greenfield and Brownfield: The Challenge of Regenerating Australia's Greyfield Suburbs." Built Environment 36 (1): 81-104.

Nolon, Sean F., Ona Ferguson, and Patrick Field. 2013. "Land in Conflict: Managing and Resolving Land use Disputes: Chapter 1." Land in Conflict: Preventing and Managing Land use Disputes, Lincoln Institute of Land Policy, Cambridge, Massachusetts, ISBN: 978-971.

Nyren, Ron. 2008. "Health Care Reaches Out: Ten Health Care Facilities Employ Creative Land use Strategies to Integrate Medical Care and Wellness Services into their Communities." Urban Land 67 (7): 50-54.

Özlüdil, Burçak. 2010. "Asylum: Inside the Closed World of State Mental Hospitals, Photographs by Christopher Payne [Book Review]." Journal of Architectural Education 64 (1): 159-161.

Park, Sharon C. 1993. Preservation Briefs: Mothballing Historic Buildings. Vol. 31. Washington, DC: U.S. Department of the Interior: National Park Service, Cultural Resources, Heritage Preservation Services.

Payne, Christopher and Oliver W. Sacks. 2009. Asylum: Inside the Closed World of State Mental Hospitals MIT Press.

PESHINA, Evellna V. 2013. "Smart City Growth: Greenfield Brownfield, Greyfield." Upravlenec 45 (5).

Petersen, Kristen A. and Thomas J. Murphy. 1988. Waltham Rediscovered: An Ethnic History of Waltham, Massachusetts PE Randall, Publisher.

Peterson, Oslel, Ann Thompson, and Mark Fisher. 2012. Town of Medfield Policy Statement: Medfield State Hospital Property Board of Selectmen, Town of Medfield.

Pollard Iii, Oliver A. 1989. "State as Steward: The Need for Historic Preservation Duties for State Agencies in Virginia, the." Va.Envtl.LJ 9 (Journal Article): 145.

Preston Redevelopment Agnecy. 2010. Http://www.Preston-Ct.org/images/pdfs/CMP_Final_Amended_4-21-10.Pdf. Preston, CT.

Rabun, J. Stanley. 2000. Structural Analysis of Historic Buildings: Restoration, Preservation, and Adaptive Reuse Applications for Architects and Engineers Wiley. com.

Rhode Island House Committee on Finance. 2013. Govenor's FY 2014 Fiscal Budget, Section IV: Capital Budget: State of Rhode Island.

Rochefort, D. A. 1999. "Mental Health Care in Massachusetts." Issue Brief (Massachusetts Health Policy Forum) (6) (6): 1-33.

Rodgers, Gil. 2014. Notes from Meetings and Phone Calls regarding Northampton State Hospital: Medfield State Hospital Vision.

Rodgers, Gil and Ros Smythe. 2013. Notes from Discussions regarding Redevelopment of Foxborough State Hospital: Medfield Sate Hospital Vision.

———. . 2013. Notes from Meeting and Visit to Boston State Hospital: Medfield State Hospital Vision.

———. . 2013. Notes from Visit to Danvers State Hospital on may 27, 2013: Medfield State Hospital Vision.

Rogers, Richard. 2005. Towards a Strong Urban Renaissance: Urban Task Force.

Roy, Patricia. 2012. "After Decades of Effort, Town Takes Over Former Rutland Heights Hospital Land." The Landmark, October 11, 2012.

Rypkema, Donovan D.,. 1994. The Economics of Historic Preservation: A Community Leader's Guide. Washington D.C.: National Trust for Historic Preservation.

Schmidt, Stephan J. 2008. "The Evolving Relationship between Open Space Preservation and Local Planning Practice." Journal of Planning History 7 (2): 91-112.

Schneekloth, Lynda H. and Marcia F. Feuerstein. 1992. Changing Places: Remaking Institutional Buildings White Pine Press (NY).

Schuleit, Anna. "State Hospitals of Massachusetts.", accessed 4/2, 2014, 1856.org.

Sommer, Robert. 1969. "Personal Space. the Behavioral Basis of Design." (Journal Article).

Stanley, Tom. "Blog for Waltham Patch, "State Proposes 'Sale Partnership Model' for Westborough, Medfield and Fernald State Hospitals," March 26, 2014, Http://waltham.Patch.com/groups/tom-Stanleys-blog/p/state-Proposes-Sale-Partnership-Model-for-Westborough-Medfield-and-Fernald-State-Hospitals." .

Stapleton, Richard M. 1993. "Rescuing a Worthy Building for a Worthy Purpose." Historic Preservation News 33 (2): 8-9.

State of Vermont. 2011. Request for Information: Future use of the Waterbury State Office Complex, Waterbury, Vermont. October 21, 2011 Site Walk through.

Sweet, Dawn. "Planning Board Public Hearing." Westborough Patch, accessed 4/2, 2014, http://westborough.patch.com/groups/politics-and-elections/p/ev--planning-board-public-hearing-5.

Telegram & Gazette (T&G). 2003. "Budget Ax Falls on Retarded ; Romney Plans to Eliminate Developmental Centers." , February 25.

The Ladd School Historical Society of Rhode Island. , accessed 4/2, 2014, http://www.theladdschool.com/index.asp.

University of Rhode Island Cooperative Extension, NEMO Program. 2005. Screening Level Assessment of Alternative Development Exeter, Rhode Island : Town of Exeter.
Vita Nuova, LLC. 2010. Lakes Regional Facility: Implementation of the Process for Risk Evaluation, Property Analysis and Reuse Decisions.

———. . 2010. Preliminary Reuse Assessment Opportunities and Constraints Analysis .

Ward Jandl, H. 1992. "The Challenge of Adapting Institutional Buildings to New Uses." In Changing Places: Remaking Institutional Buildings, edited by Lynda H. Schneekloth, Marcia F. Feuerstein and Barbara A. Campagna, 213-214-223. Fredonia, New York: White Pine Press.

Waterbury Planning Commission. 2013. Waturbury Municipal Plan: 2013-2018: Town and Village of Waterbury, Vermont.

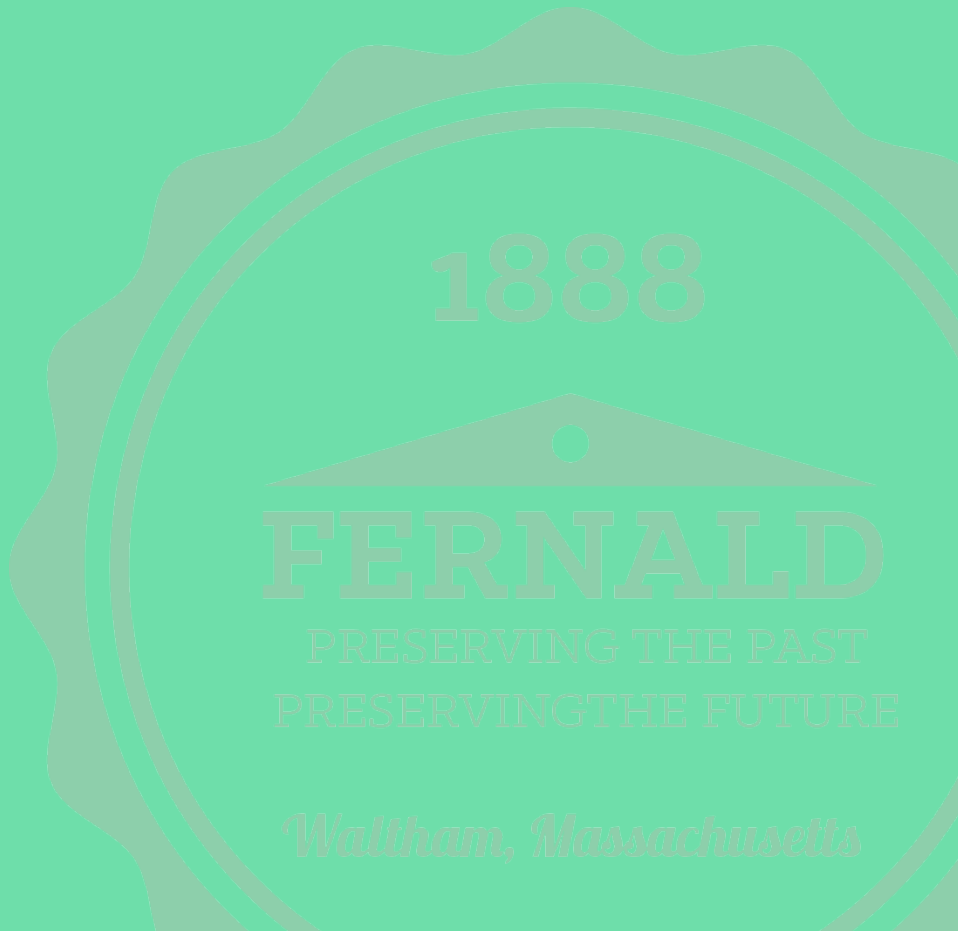
Winters, Terry. 1978. National Register of Historic Places Inventory: Waterbury Village Historic District. Montpelier, VT: US Department of the Interior: National Park Service.

Yanni, Carla. 2007. The Architecture of Madness: Insane Asylums in the United States U of Minnesota Press.

Yung, Esther H. K. and Edwin H. W. Chan. 2012. "Implementation Challenges to the Adaptive Reuse of Heritage Buildings: Towards the Goals of Sustainable, Low Carbon Cities." Habitat International 36 (3): 352-361.

Zezima, Katie. 2006. "Abandoned Hospitals for the Mentally Ill Morph into Housing." The New York Times, January 15, 13.

APPENDIX B: MEMORANDUM OF UNDERSTANDING



MEMORANDUM OF UNDERSTANDING

BETWEEN

TUFTS UNIVERSITY FIELD PROJECTS TEAM NO. 5:

SAVING A COMMUNITY OF HISTORIC BUILDINGS - THE WHY AND THE WHAT

AND

FERNALD WORKING GROUP

I. Introduction

Project Number: 5
Project Title: Adaptive Reuse & Community Integration: Fernald Developmental Center
Client: Fernald Working Group

This Memorandum of Understanding (the "MOU") summarizes the scope of work, work product(s) and deliverables, timeline, work processes and methods, and lines of authority, supervision and communication relating to the Field Project identified above (the "Project"), as agreed to between (i) the UEP graduate students enrolled in the Field Projects and Planning course (UEP-255) (the "Course") offered by the Tufts University Department of Urban and Environmental Policy and Planning ("UEP") who are identified in Paragraph II(1) below (the "Field Projects Team"); (ii) Fernald Working Group , further identified in Paragraph II(2) below (the "Client"); and (iii) UEP, as represented by a Tufts faculty member directly involved in teaching the Course during the spring 2014 semester.

II. Specific Provisions

(1) The Field Projects Team and contact information:

1. Hanaa Abdel Rohman hanaa.rohman@tufts.edu
2. Laurie Calvert laurie.calvert@tufts.edu
3. Jim McKeag jim.mckeag@tufts.edu
4. Rebecca Toole rebecca.toole@tufts.edu

(2) The Client, primary contact and contact information:

Fernald Working Group (FWG)
Steve Laferriere
steve@metrowestcd.org
(617) 923-3505 ext. 6
FAX: (617) 923-8241
63 Mt. Auburn Street Watertown, MA 02472

www.fernaldworkinggroup.org

(3) The overarching goal of the project is to support the efforts of the Fernald Working Group, an interest group concerned with the future of the Fernald Development Center in Waltham, MA. The FWG was founded by community activists in 2004 after the State announced its intentions to close the site and sell the property. Since that time the FWG has engaged in planning activities and developed a vision for the site that takes local interests into consideration. Specifically, this project will help the Fernald Working Group (FWG) to better understand the challenges and opportunities of integrating the site into the surrounding communities, by identifying the common issues in repurposing and developing large institutional sites that have outlived their usefulness and by matching the objectives of the FWG to aligning interests and needs of local and regional stakeholders. In our initial investigation the Team has identified four areas that will help the FWG move the ideas and principles contained in their vision statement forward. These areas of concentration are:

1. Synthesizing existing and new research and resources
2. Clarifying stakeholder interests and needs
3. Identifying the challenges and opportunities that arise from the confluence of local, regional and state interests
4. Prioritizing and recommending next steps, and developing strategies to build alliances and further the vision of the FWG

(4) The methods and processes – including the methodologies -- through which the Field Projects Team intends to achieve these goals are:

- Survey or interview the primary FWG group members
- Literature review including: a brief history of the Fernald Development Center that orients the site within the larger narrative of re-purposed mental institutions; an introduction of established best practices of redevelopment, adaptive reuse, and reintegration of institutional campuses; case studies of select mental institutions that have gone through similar processes
- Site visit and perimeter observations using field research techniques
- Interview 4-8 stakeholders and create inventory of interests, including UMass Extension, DCAM, COFAR
- Descriptive maps of Fernald Development Center and surroundings

(5) The work products and deliverables of the Project (including any additional presentations for the client, and project elements in order of priority):

- Written report including:
    - Explanation of research process: question, goals, process and methods
    - Historical background and current state of the Fernald site
    - Stakeholder inventories
    - Points of convergence and points of contention
    - Recommendations

- Appendices

(6) Anticipated Project timeline (with anticipated dates for key deliverables):

- 2/6: MOU signed by FWG representative, Team and Justin Hollander
- 2/10: Attend FWG meeting
- 2/12: FWG survey and stakeholder interview scripts drafted
- 2/14: Literature review checkpoint
- 2/26: Project Proposal Due
- 2/27: FWG Surveys/Interviews Inventories Completed
- 3/1: Stakeholder Inventories Completed
- 3/10: Attend FWG meeting
- 3/12: Initial draft stakeholder inventories documented; Midcourse Presentations
- 3/31: Initial draft of final written report
- 4/14: Attend FWG meeting
- 5/2: Final Product Due

(7) The lines of authority, supervision and communication between the Client and the Field Projects Team are (or will be determined as follows):

Steve Laferriere will serve as the primary point of contact between the Field Projects Team and the Client. The Team will meet with Steve on a monthly or bi-monthly basis and will provide additional updates per the request of the Fernald Working Group. The Team has permission to directly contact other members of the Fernald Working Group and other stakeholders as needed over the course of the project. Jim McKeag has agreed to be the primary interface with Steve Laferriere as a means to streamline high level project information with the client.

(8) The understanding with regard to payment/reimbursement by the client to the Field Projects Team of any Project-related expenses is:

The Team does not anticipate any significant expenses. Any appropriate expenditure that does arise, however, will be documented through receipts and will be submitted to the Department of Urban and Environmental Policy and Planning by the Team.

III. Additional Representations and Understandings

A. The Field Projects Team is undertaking the Course and the Project for academic credit and therefore compensation (other than reimbursement of Project-related expenses) may not be provided to team members.

B. Because the Course and the Project itself are part of an academic program, it is understood that the final work product and deliverables of the Project (the "Work Product") – either in whole or in part – may and most likely will be shared with others inside and beyond the Tufts community. This may include, without limitation, the distribution of the Work Product to

other students, faculty and staff, release to community groups or public agencies, general publication, and posting on the Web. Tufts University and the Field Projects Team may seek and secure grant funds or similar payment to defray the cost of any such distribution or publication. It is expected that any issues involving Client confidentiality or proprietary information that may arise in connection with a Project will be narrow ones that can be resolved as early in the semester as possible by discussion among the Client, the Field Projects Team and a Tufts instructor directly responsible for the Course (or his or her designee).

C. The Team will maintain ownership of any new research data and will be considered the authors of the report. The Team will provide the client a final copy of the project, including visual, digital, and written materials. The Team grants the client full use of the data and information included within the final report, given recognition of authorship by the Field Projects Team. The client will not alter the text of the final report without the consultation of the Team and will not attribute any changes on the part of the client to the Team.

D. It is understood that this Project may require the approval (either through full review or by exemption) of the Tufts University Institutional Review Board (IRB). This process is not expected to interfere with timely completion of the project.

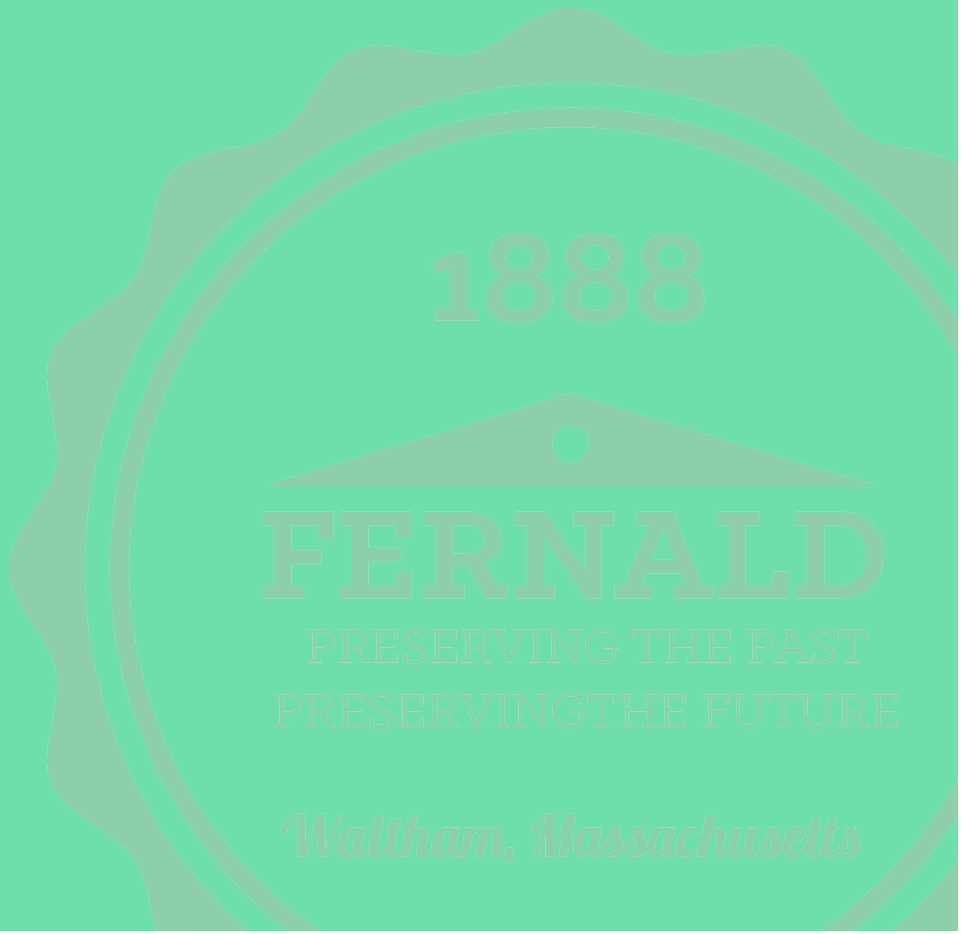
IV. Signatures

Representative of the Fernald Working Group
By: Steve Laferriere
Date: February 9, 2014

Representative of the Field Projects Team
By:
Date: February 19, 2014

Tufts UEP Faculty Representative
By: Justin Hollander
Date: Feb 19, 2014

APPENDIX C: IRB DOCUMENTS



Tufts UNIVERSITY

OFFICE OF THE VICE PROVOST FOR RESEARCH

Social, Behavioral, and Educational Research
Institutional Review Board
FWA00002063

Title: Adaptive Reuse & Community Integration: Fernald Development Center

February 20, 2014 | Notice of Action

IRB Study # 1402009 | Status: EXEMPT

PI: Laurie Calvert
Co-Investigator(s): James McKeag, Rebecca Toole, Hanaa Rohman
Faculty Advisor: Justin Hollander
Review Date: 2/20/2014

The above referenced study has been granted the status of Exempt Category 2 as defined in 45 CFR 46.101 (b). For details please visit the Office for Human Research Protections (OHRP) website at: http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html#46.101(b)

- The Exempt Status does not relieve the investigator of any responsibilities relating to the research participants. Research should be conducted in accordance with the ethical principles, (i) Respect for Persons, (ii) Beneficence, and (iii) Justice, as outlined in the Belmont Report.
- Any changes to the protocol or study materials that might affect the Exempt Status must be referred to the Office of the IRB for guidance. Depending on the changes, you may be required to apply for either expedited or full review.

IRB Administrative Representative Initials: _____

Tufts UNIVERSITY

OFFICE OF THE VICE PROVOST FOR RESEARCH

Social, Behavioral, and Educational Research
Institutional Review Board
FWA00002063

March 27, 2014 | Notice of Action

IRB Study # 1402017 | Status: ACTIVE

ATTENTION: BEFORE CONDUCTING ANY RESEARCH, PLEASE READ THE ENTIRETY OF THIS NOTICE AS IT CONTAINS IMPORTANT INFORMATION ABOUT PROPER STUDY PROCEDURES.

Title: Adaptive Reuse & Community Integration: Fernald Development Center

PI: James McKeag
Study Coordinator: Rebecca Toole
Co-Investigator(s): Laurie Calvert, Hanaa Rohman
Faculty Advisor: Justin Hollander

The PI is responsible for all information contained in both this notice of action and on the following **Investigator Responsibilities Sheet.**

Only copies of approved stamped consent forms and other study materials may be utilized when conducting your study.

This research protocol now meets the requirements set forth by the Office for Human Research Protections in 45 CFR 46 under Expedited Category 7.

Reviewed 3/25/2014 – Expires 3/24/2015

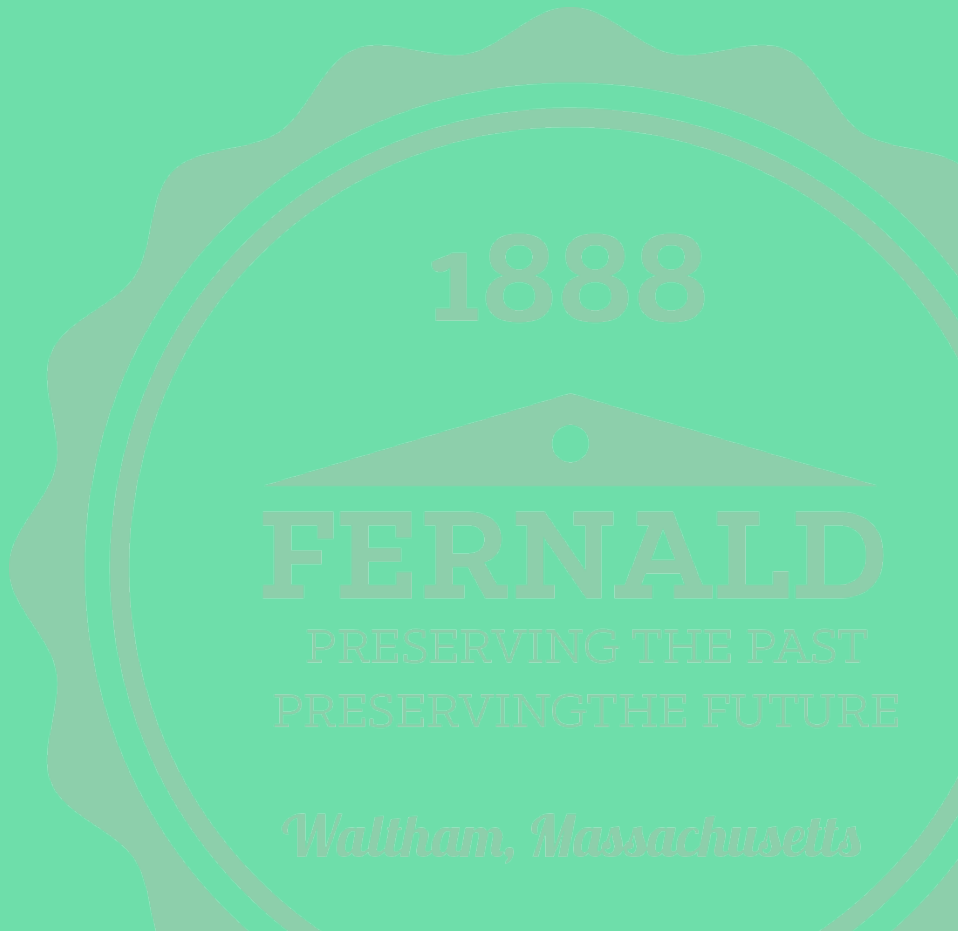
- Approved for 25 participants for the duration of the study.

Protocol Management:

- All translated study documents must be submitted for review, approval, and stamping prior to use.
- For all changes to the protocol, submit: *Request for Protocol Modification* form
- All Adverse Events and Unanticipated Problems must be reported to the Office of the IRB promptly (no later than 7 calendar days after first awareness of the problem) using the appropriate forms.
- Six weeks prior to the expiration of the protocol on 3/24/2015, investigators must submit either a *Request for Continuing Review* or a *Request for Study Closure*
- All forms can be found at: **http://www.tufts.edu/central/research/IRB/Forms.htm**

IRB Administrative Representative Initials: _____

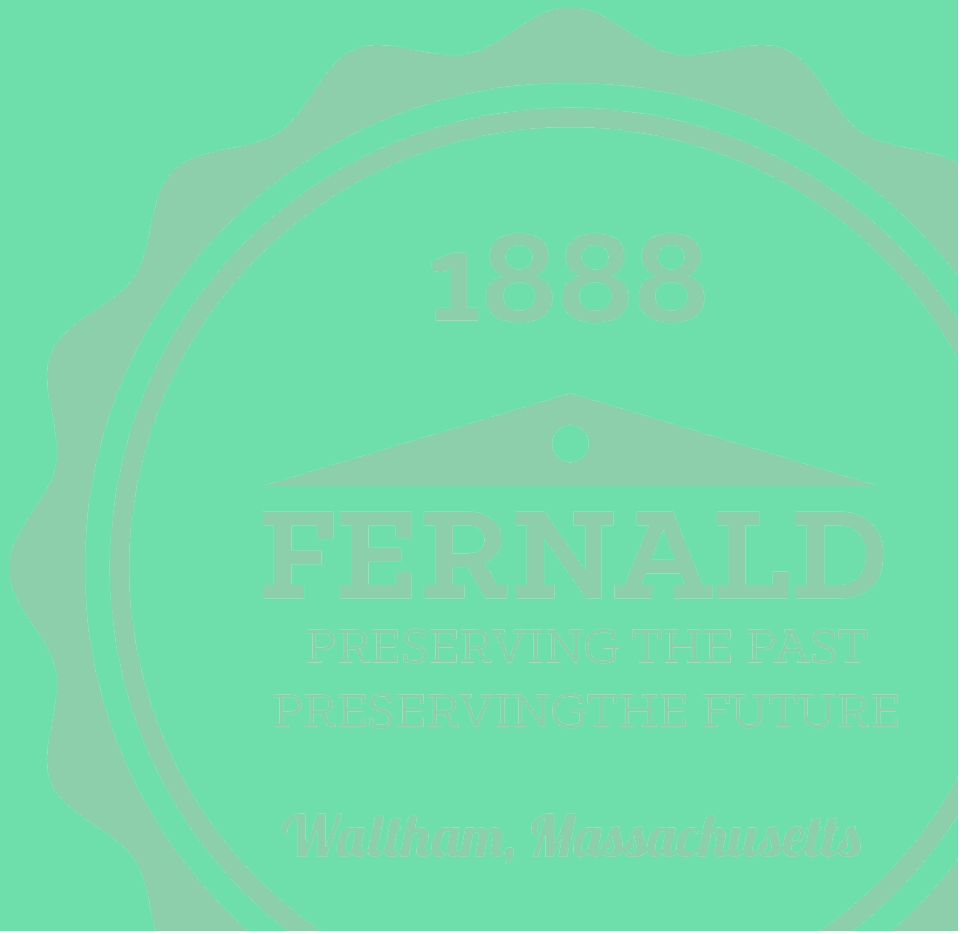
APPENDIX D: META-ANALYSIS SNAPSHOT



SITE	STATE	POPULATION DENSITY	MEDIAN HOUSEHOLD INCOME	BUILDINGS	ACREAGE	YEAR CLOSED	DISPOSITION	COTTAGE STYLE	NATIONAL REGISTRY OF HISTORIC PLACES	ADAPTIVE REUSE	PRIVATE DEVELOPER	PROPERTY DIVIDED	OPEN SPACE	AFFORDABLE HOUSING	REDEVELOPMENT AUTHORITY, CDC OR EDC INVOLVEMENT	CITIZEN'S VOLUNTEER GROUP INVOLVED	ELECTED OR APPOINTED REUSE COMMITTEE
FAIRFIELD SATE HOSPITAL	CT	478	$90,193	29	520	1995	2001	+		+			+			+	+
MANSFIELD TRAINING SCHOOL	CT	595	$48,888	60	500	1993		+	+	+		+					
NORWICH STATE HOSPITAL	CT	153	$51,304	55	480	1996	2009	+	+				+		+		
BELCHERTOWN STATE SCHOOL	MA	278	$75,502	40	876	1992	2000	+	+			+	+		+		+
BOSTON STATE HOSPITAL	MA	2,792	$42,164	N/A	250	1979	1996	+	+	+	+	+	+	+		+	
DANVERS STATE HOSPITAL	MA	1,995	$78,593	N/A	178	1992	2005		+	+	+	+	+	+		+	+
FOXBOROUGH STATE SCHOOL	MA	850	$64,323	100	160	1976	2004		+	+	+	+	+	+	+	+	+
GRAFTON STATE HOSPITAL	MA	763	$50,020	NA	1,200	1973	1978	+	+	+		+			+		
LYMAN STATE SCHOOL FOR BOYS	MA	888	$99,394	NA	100	1971	2011	+	+		+	+					
MEDFIELD STATE	MA	835	$56,905	58	225	2003	N/A	+	+							+	

SITE	STATE	POPULATION DENSITY	MEDIAN HOUSEHOLD INCOME	BUILDINGS	ACREAGE	YEAR CLOSED	DISPOSITION	COTTAGE STYLE	NATIONAL REGISTRY OF HISTORIC PLACES	ADAPTIVE REUSE	PRIVATE DEVELOPER	PROPERTY DIVIDED	OPEN SPACE	AFFORDABLE HOUSING	REDEVELOPMENT AUTHORITY, CDC OR EDC INVOLVEMENT	CITIZEN'S VOLUNTEER GROUP INVOLVED	ELECTED OR APPOINTED REUSE COMMITTEE
METROPOLITAN STATE HOSPITAL	MA	4,763	$68,326	20		1992		+	+		+		+	+			+
NORTHHAMPTON STATE HOSPITAL	MA	834	$41,808	48	535	1993			+	+		+	+	+	+	+	
RUTLAND HEIGHTS STATE HOSPITAL	MA	219	$83,734	39	88	1991	2012	+					+		+		
WESTBORO STATE HOSPITAL	MA	845	$99,394	20	300	2010	2013	+	+	+		+			+		+
MAINE SCHOOL FOR THE FEEBLE MINDED (POWNAL, PINELAND)	ME	118	$60,664	28	1,226	1996	2000	+		+			+				+
LACONIA STATE HOSPITAL	NH	156	$42,758	31	250	1991	In pro-cess	+		+						+	+
SOCKANOSSET BOYS TRAINING SCHOOL	RI	2,837	$44,108	N/A	30	1995	2008	+		+	+						
THE LADD SCHOOL	RI	112	$64,452	30	330	1993	2006	+							+		
BRANDON SCHOOL FOR THE FEEBLE MINDED	VT	99	$35,810	N/A	300	1993	1997	+	+	+	+	+		+			
VERMONT STATE HOSPITAL	VT	105	$60,500	N/A	1,500	2011	N/A							+			

APPENDIX E : SAMPLE INTERVIEW QUESTIONS



SAMPLE INTERVIEW GUIDE

Adaptive Reuse & Community Integration: The Fernald Developmental Center

Research Questions: What are the challenges and opportunities of integrating large institutional sites that have developed independently and outlived their usefulness into their surrounding communities? How do these relate to the Fernald? How can the FWG form and strengthen relationships that help achieve their vision?

Interviewee: TBD

Introduction

Thank you for participating in this interview; it is entirely voluntary and you can terminate the interview at any time for any reason. Information gathered as a part of this study will be used to help our research team better understand the process of state land disposition and to recommend specific approaches to the Fernald Working Group (FWG) for the purposes of exploring potential uses for the Fernald Developmental Center (FDC), and for building consensus around specific planning activities. It is the objective of the team to accurately portray the concerns and interests of all involved stakeholders and to provide valuable information for building consensus and resolving contentious issues in regards to the FDC. Let's get started.

Question 1
How long have you been with your current organization?

Follow up 1: What are you responsibilities?
Follow up 2: How does your role relate to the mission of your organization?

Question 2
Can you help us understand your knowledge of the Fernald site?

Follow up 1: What is your relationship to the Fernald site

Question 3
What are some of the uses that you would like to see in the reuse of the Fernald?

Follow up 1: Ask about specific uses:
Affordable housing
Light Industrial Use
The Western Greenway
Agriculture
General recreation/open space
Historic Preservation

Question 4
What needs do you think the Fernald could serve for Waltham and surrounding communities?

Follow up1: What potential needs might the Fernald serve for the Commonwealth and the general public

Question 5

Diverse uses and neighbors surround the Fernald. Can you envision future uses of the Fernald that would help integrate it into these existing uses?

Question 6
In thinking about the fate of the Fernald site, what would you consider to be the ideal process for determining its reuse.

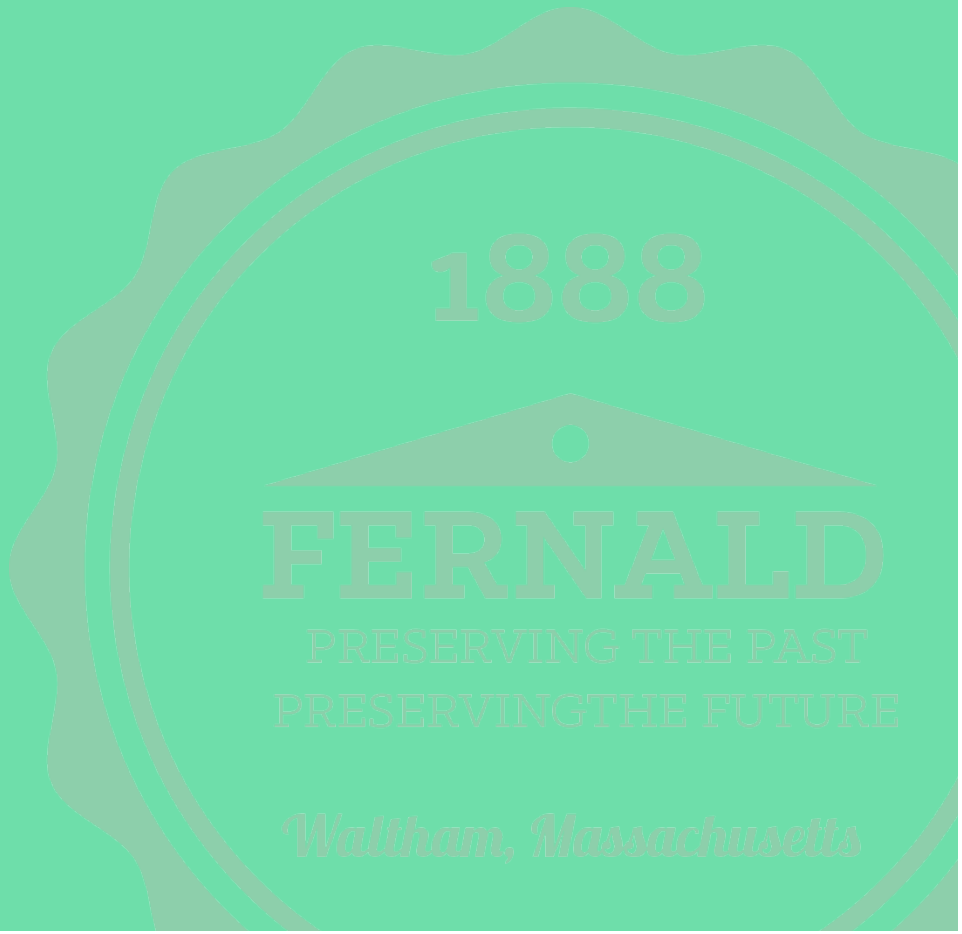
Follow up 1: Do you have a sense of what a community process for the reuse of the Fernald should look like?

Question 7
Are familiar with the Fernald Working Group?

Follow up 1: Are you familiar with their mission
Follow up 2: Can we forward you FWG's vision statement

Question 8
Thank you for your time and willingness to sit down for this interview. In closing, do you have any concerns or questions for us?

APPENDIX F: SURVEY REPORT



1. The following list of objectives was derived from the FWG vision statement. Using numbers 1-5, please indicate the five objectives you consider MOST IMPORTANT to the mission of the FWG. Please rank the five objectives by importance to the mission, in order from the first priority to the fifth priority.

Answer	1	2	3	4	5	Total Responses
Providing affordable housing	1	1	3	2	0	7
Daylighting the culverted stream	2	0	0	1	2	5
Increasing public access to open space	1	2	0	1	1	5
Preserving the existing historical structures	0	1	1	0	2	4
Increasing public transportation options around the site	1	0	1	2	0	4
Expanding the Western Greenway	1	2	0	0	0	3
Reducing traffic congestion on Trapelo Road	0	0	1	1	0	2
Asbestos and toxics remediation	0	1	1	0	0	2
Preserving the historical landscape	1	0	0	0	0	1
Reducing current energy consumption on the site	0	0	0	0	1	1
Encourage the state to move the remaining residents into a central location	0	0	0	0	1	1
Recycling building materials on site	0	0	0	0	0	0
Introducing other forms of energy generation	0	0	0	0	0	0
Stabilizing existing structures from further decay	0	0	0	0	0	0

2. The following list of objectives was derived from the FWG vision statement. Using numbers 1-3, please indicate the three objectives you consider LEAST IMPORTANT to the mission of the FWG. Please rank the three objectives by irrelevance to the mission, in order from the lowest priority to the third lowest priority.

Answer	1	2	3	Total Responses
Consolidating residents in a single facility	3	1	0	4
Reducing current energy consumption on the site	0	3	1	4
Reducing traffic congestion on Trapelo Road	0	2	2	4
Introducing other forms of energy generation	0	1	2	3
Recycling building materials on site	3	0	0	3
Asbestos and toxics remediation	1	0	1	2
Preserving the historical landscape	0	0	1	1
Other (please elaborate in next question)	0	0	0	0
Providing affordable housing	0	0	0	0
Stabilizing existing structures from further decay	0	0	0	0
Increasing public transportation options around the site	0	0	0	0
Preserving the existing historical structures	0	0	0	0
Daylighting the culverted stream	0	0	0	0
Increasing public access to open space	0	0	0	0
Expanding the Western Greenway	0	0	0	0

3. Please indicate the degree of your agreement with this statement: The following uses would be appropriate for the Fernald site in the future.

Answer	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Hiking/Biking Trails	6	1	0	0	0
Community Gardens	5	1	1	0	0
Mixed Units	4	3	0	0	0
Playgrounds	3	4	0	0	0
Elderly Services	3	1	3	0	0
Small Business	3	4	0	0	0
Residences for the Disabled	2	4	1	0	0
Retail	2	2	1	2	0
Ball Fields	2	3	2	0	0
Homeless Services	1	2	2	2	0
Treatment for the Disabled	1	2	4	0	0
Commercial	1	0	3	3	0
Commemoration	1	4	0	1	0
Multi Family/High Density	1	2	2	1	1
K-12	0	3	1	3	0
Higher Education	0	1	0	4	2
Specialty Training	0	2	3	2	0
State Agencies	0	1	5	1	0
Light Industry	0	4	0	1	2
Research/Experimental	0	2	4	1	0
Single Family	0	1	2	2	2

4. Of FWG's interests or objectives as articulated in the vision statement and repeated in Q1 and Q3, which do you feel is the most realistically achievable and why?

- Making open space available to public. This is a course of action that has had success in Waltham and is not perceived as a threat by most citizens and officials.
- Greenway was favored by all participants in the Reuse Committee as well as the public at various citizens' Input hearings.
- Preservation of historic buildings as mixed use hosuing, including some component of affordable housing and elderly housing, and preservation of some open space. These objectives have the most support among the political leaders of the city.
- Opening the Western Greenway. Trees do not vote.
- Increasing public access to open space is the most achievable because the site currently has a fair amount open space, all of which is relatively unavalable to the general public. Once the property is turned off to a new steward(s), little work will need to be done to allow access to the existing open space amenities.
- The Open Space/greenway is the one that everyone in both the City and the State seem to agree with.
- Greenway trail could be implemented immediately.

5. Of FWG's interests or objectives as articulated in the vision statement and repeated in Q1 and Q3, which do you feel is the most promising and why?

- Making open space available to public. People have lost connection with the environment. It is important for people too see spaces that are not controled by humans.
- Consolidation of residents for efficient staffing, services, and supervision.
- Daylighting the culverted stream, small retail shops. Daylighting the stream and restoring wetlands that had been filled in may help solve problems with downstream flooding. Having a mixture of shops and housing will add to the liveability of site, cut down on traffic, and make the place more lively.
- Potential limited development of a mixed use village.
- I think that preserving existing historical buildings and creating new affordable housing are potentially complimentary objectives and are therefore the most promising.
- Developing mixed, cluster housing using the existing facades or existing footprints with some small retail to allow the establishment of a community is the key to the FWG proposal. These elements would provide needed housing, preserve the historic character of many of the buildings while allowing for plenty of open space.
- Transportation oriented development holds great promise as this neighborhood is extremely underserved

6. As you consider your answers to the last question, please indicate what populations you envision would be served by the reuse of the Fernald. You may select multiple groups.

Answer	Response
Families	6
Seniors	5
Children	5
Local Residents	5
General Public	5
Disabled	5
Regional Residents	4
Students	2
Other Group	1

7. If you chose "Other Group" for the previous question, please elaborate:

- Small businesses and professional offices
- All of the above. We need to be able to connect to the natural world.

8. If you wish to, please elaborate on any issues relating to the specific objectives of FWG.

- Salvage of valuable building materials removes a potential hazard and provides revenue for rehabilitation of potentially useful space. Reduction in the acres of lawn can make way for orchards or farm structures. Provision of new links to public transportation can benefit neighbors as well as users of the site.
- While I support affordable housing, I do not want to create a ghetto of poor people. Housing should be mixed incme so that no stigma is associated with living there. New buildings should be integrated architecturally with historic site, and as many as possible of historic buildings should be preserved.
- The community must be able to sustain any use of the property. We can not develop ourselves into bankruptcy or gridlock.
- The main idea is to make Fernald a self-contained neighborhood that combines many of the elements of the rest of Waltham. It would be a diverse community as to ages, family size, race and culture, and incomes. There is a general negative attitude in Waltham and many other communities around the concept of community housing. Many people equate community housing with public housing projects that seems to perpetuate poverty. Mixed community housing serves all income groups with the intention of promoting upward mobility for the disadvantaged residents.

9. What scope or level of stakeholders is most crucial for FWG to engage with?

Answer		Response
Local		4
State		2
Regional		1

10. Please identify the stakeholder(s) that it is most critical for FWG to engage and explain why.

- Waltham and surrounding cities and towns. Those stakeholders are most impacted by action taken.
- State objection to terms and conditions of reuse must be overcome in order to allow for local preferences to direct nature of State ownership must yield to locally planned new and rehabilitated construction and uses. While Fernald crumbles state money developed a new mental hospital in Worcester and is keeping part of Taunton State Hospital open as well.
- Planning should be from the bottom up and reflect the needs of the local community. Too often, state level planners have their own agenda, and there is a significant amount of corruption at the upper levels of state government (not the governor).
- State of Massachusetts, Bentley University, University of Mass, Girl Scouts, Gann Academy, all abuttors. DCAM because of its "Highest and Best" mandate to get the most money for the property.
- The neighbors who would be most directly impacted are the most critical stakeholders, because they have the power, if proactively engaged in planning, to use their local knowledge to create a redevelopment that best servese the needs of the local and regional community and they would have the incentive to be staunch advocates for the Vision.
- It appears that the State has struck some sort of deal as to how to transfer the property to the City. It is the City that will determine what happens with the property.
- governor? He could unilaterally expedite

11. Please identify the stakeholder(s) that is most threatening to the FWG mission and explain why.

- Commercial developers. They have no interest in the final impact of actions taken. Their concerns are using the property as a means to profit.
- Governors present and past have been at war with department heads and their clients.
- DCAM & state legislature, excluding local reps.
- Bentley University, U Mass have never publically indicated their thoughts on the Fernald.
- That City and the Commonwealth, as the actors who currently seem to have decision-making power, but don't currently seem to be interested in planning at all, nevermind engaging other stakeholders, are the biggest threats to the FWG mission of engaging the community to create a proactive plan to redevelop the Fernald to meet multiple community needs.
- Many in the City want to acquire Fernald but essentially leave it alone or make it a cemetery. Many are very afraid of adding housing because of the impact on Trapelo Road but have not been willing to see that there are ways to ease the additional traffic. The traffic solutions would largely depend on working with the State and the MBTA and many officials trust neither.
- DCAM -- they control the process to the extent the governor doesn't intevene

12. If you wish to, please elaborate on any issues relating to stakeholders.

- Our former state senator lamented about the amount of corruption on Beacon Hill. Redevelopment projects should not be a way to reward political donors.
- Will the state let a group of investors develop the property into luxury housing?
- It appears that the Mayor has her own plans but she is not forthcoming with her thoughts. Many in the City Council seem to be in bed with developers but have not shown their hands. It's also unclear if Bentley has any designs on the site. Bentley has floated the idea of adding a law school (just what Massachusetts needs) and law schools are often on property that is near to the main campus but not on that campus. Fernald would work for that purpose,

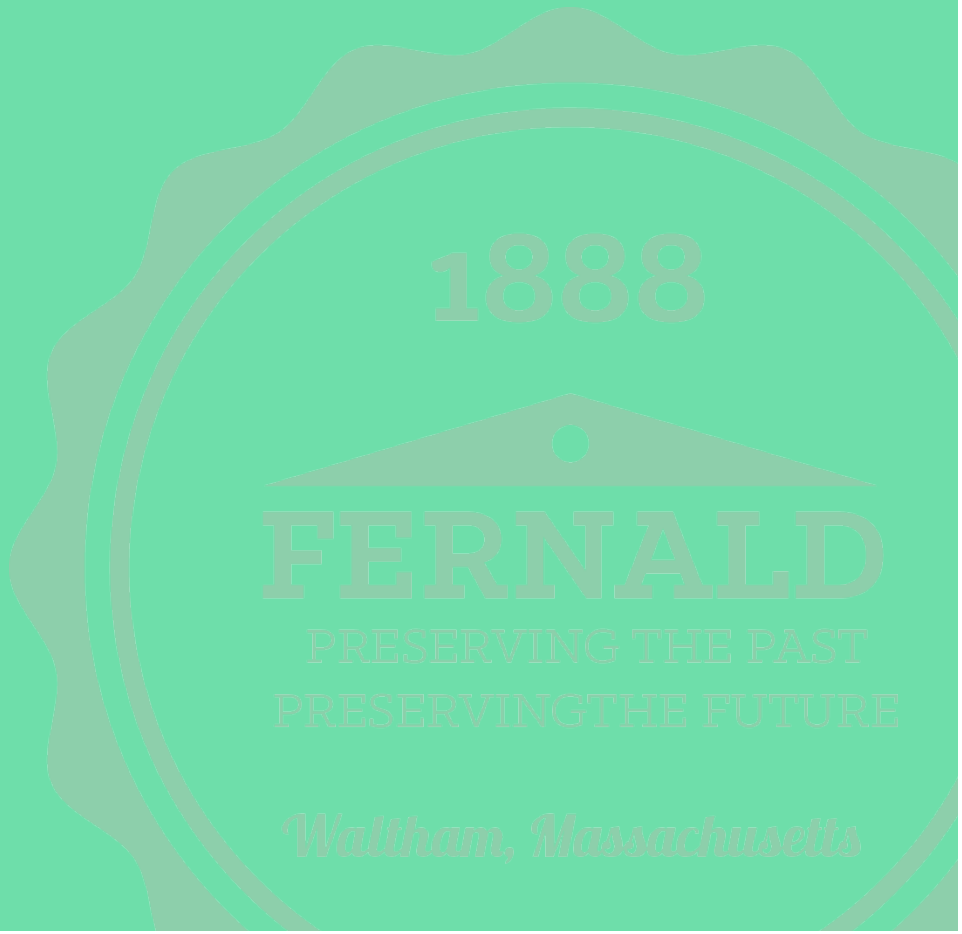
13. What time frame should FWG considered when planning for the future of Fernald?

Answer		Response
1-3 years		3
3-5 years		2
More than 10 years		2
Less than 1 year		0
5-10 years		0
Total		7

14. If you wish to, please elaborate on any others issues or concerns not addressed within the survey.

- The election cycle and the budget allocations for Fernald. The state can reduce the cost per client by admitting more clients. A location for shelters for women vets and thie families. The toxic nature of the remains from the furnace. Who will clean the sight and how will it be financed.
- The longer the acquisition of Fernald takes, the fewer the options to re-use some of the buildings on the site. The state is doing nothing to preserve the buildings. The swimming pool, the auditorium and the library would be of value to the whole of Waltham, but if the acquisition does not occur soon, these building may require more refurbishment that is economically feasible,

APPENDIX G: STATE HOSPITAL PROFILES



Name	SOCKANOSSET BOYS TRAINING SCHOOL
Location	Cranston, RI
Population	80,387
Population Density (per sq mile)	2,837
Median Household Income	$44,108
Date Built	1881
Date Closed	early 1990's
Disposition	2008
Architect	Stone, Carpenter and Wilson
Plan	Cottage
Style	Gothic Revival
NRHP Listing	No
Size	30 acres
Current Use	Mixed Use: Commercial, Professional, Residential
	Chapel View: outdoor shopping center
	$90 million budget
	10 buildings
	304,000 sq. ft. of retail and restaurant space
	75,000 sq. ft. of office space
	35 residential condominiums
Developers	Carpionato Properties (private)
Afforable Housing	None
Adaptive Reuse	Preserved historic 1891 chapel, rebuilt an infirmary, renovated three dormitories
Open Space	Minimal
Community Process	Little to none. Some residents advocated for a park, but wish was not fulfilled.
Special Zoning	None
Notes	No Historic Tax Credit program existed at the time, which limited desirability of the property.

Name	BELCHERTOWN STATE SCHOOL
Location	Belchertown, MA
Population	14,479
Population Density (per sq mile)	278
Median Household Income	$75,502
Date Built	1922
Date Closed	1992
Disposition	early 2000's
Architect	Kendall, Taylor, & Co
Plan	Cottage
Style	Colonial Revival
NRHP Listing	1994 #94000688
Size	876 acres
	40 buildings
Current Use	Institutional (550 acres)
	Department of Agriculture New England Small Farm Institute
	Community Facilities
	Elementary and Middle Schools Recreation and athletic facilities
	Plenary (300 acres)
	Care facilities for the elderly and age restricted residences BEDIC hoping to encourage small business and light industry
Developers	Belchertown Economic Development & Industrial Corporation
Afforable Housing	None
Adaptive Reuse	Planned for several buildings
Open Space	Yes
Community Process	Volunteer Citizen Reuse Committee
	Voters authorized the establishment of the BEDIC in 1992
	A number of studies and town meetings held during 1990's and 2000's
Special Zoning	Economic Opportunity Area

Name	NORWICH STATE HOSPITAL
Location	Nerwich-Preston, CT
Population	40,493
Population Density (per sq mile)	153
Median Household Income	$51,304
Date Built	1903
Date Closed	1996
Disposition	2009
Architect	Cudworth & Woodworth
Plan	Cottage
Style	Colonial Revial, Late Gothic Revival
NRHP Listing	1988 #87002424
Size	480 acres
	55 buildings
	1.3 mil sq. ft.
Current Use	Plenary
	Community Facilities: Preston Riverwalk
Developers	Preston Redevelopment Authority
Afforable Housing	None
Adaptive Reuse	Investigated for admin building
Open Space	Yes
Community Process	Series of public forums
Special Zoning	Campus Preservation Overlay Zone and Planned Business Overlay Zone created to encourage commercial development
Notes	390 acres owned by town of Preston
	Preston Riverwalk currently for sale by city
	A number of buidlings were demolished in 2011
	PRA established to oversee reuse process

Name	FAIRFIELD STATE HOPSITAL
Location	Newtown, CT
Population	27,560
Population Density (per sq mile)	478
Median Household Income	$90,193
Date Built	1929
Date Closed	1995
Disposition	2001
Architect	Walter P. Crabtree, Sr.
Plan	Cottage
Style	Colonial Revival
NRHP Listing	No
Size	520 acres
	29 buildings
Current Use	Community Facilities
	Town Municipal Center Newtown Youth Academy Ballfields
	Plenary
	Plans approved for open space and recreation, arts facilities, public services, light retail and professional offices
Developers	Accepting proposals
Afforable Housing	None
Adaptive Reuse	Yes, five buildings repurposed already and four more marked for preservation
Open Space	Yes, 40%
Community Process	Selectmen appointed Fairfield Hills Master Plan Ad Hoc Committee; Volunteer Citizen Community Input Council reviewed master plan; Held 26 meetings open to the public; Sponsored a tour of the campus with between 350 and 400 attendees; Produced a video tour of the campus for broadcast on local access TV two; Administered a town-wide survey with 1000 responses.
Special Zoning	Fairfield Hospital Adaptive Reuse Zone and Aquafer Protection District Zoning

Name	MANSFIELD TRAINING CENTER
Location	Mansfield, CT
Population	26,543
Population Density (per sq mile)	595
Median Household Income	$48,888
Date Built	1860
Date Closed	1993
Disposition	
Architect	Cudworth, Woodworth, and Thompson
Plan	Cottage
Style	Colonial Revival
NRHP Listing	1987 #87001513
Size	500 acres
	60 buildings
Current Use	Some buildings demolished; others abandoned
	Intsitutional UConn Depot Campus Bergin Correctional Facilities (closed) Community School of the Arts and Chaplin Cottage Center for Clean Energy Engineering Ballard Institute of Puppetry
Developers	UConn, State of Connecticut
Afforable Housing	No
Adaptive Reuse	Partial
Open Space	No
Community Process	None