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### Capital Expansion and Organizational Growth: A Cost-Effective Analysis for Huntington Family Centers

Sean P. Burke

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Capital Expansion and Organizational Growth: A Cost-Effective Analysis for  
Huntington Family Centers.

BY

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BA, SUNY Cortland, 2006

CAPSTONE PROJECT

Submitted in partial fulfillment of the requirements for  
the degree of Masters in Public Administration in the Graduate School of  
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## Abstract

Huntington Family Centers Inc., is a nonprofit social service agency located in the near-Westside of the City of Syracuse, NY. The agency currently employs 75 people and offers 25 programs, ranging in focus from preschool to services for senior citizens. It has developed a business plan with the goal of increasing program services by 35% over the next two years. However, as new programs are considered, it will be forced to rent space due to the lack of functional space at its primary location. Ideally, Huntington Family Centers would prefer to deliver all of its services at its primary location, where the organization can better serve the needs of the near-Westside community. HFC has identified four mutually exclusive options, which could address these concerns. A cost-effective analysis was conducted to identify the option with the highest cost-effective ratio. As a result, renovating the vacant Adele Nelson Building and restructuring the floor plan proved to be the most cost-effective option.

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## Introduction

In the fall of 2007, Huntington Family Centers Inc. (HFC) was chosen by the Rosamond Gifford Foundation to participate in the ADVANS project, which stands for Advancing and Developing the Value and Assets of Nonprofits in Syracuse. The purpose of this project is to address and develop capacity deficiencies within the organization through professional consultation and grant investment. Huntington Family Centers was chosen “because of the importance of their mission and services to the people of Central New York and because of their institutional readiness and excellent position to participate in this rigorous initiative.(The Gifford Foundation, 2007)”

The Rosamond Gifford Foundation has shifted its approach to grant making from program related funding to efforts that address the effectiveness and sustainability of nonprofit organizations. “Working with the development of capacity models, we believe we will be able to reinforce the concept that nonprofits are best able to accomplish their programs or mission as they develop and maintain overall institutional durability, health and competence. (The Gifford Foundation, 2007)” This conscious effort to address organizational capacity will focus on administrative systems, management, financial resources, and governance.

The ADVANS project uses Dr. Susan Kenny-Stevens’ self-assessment and business planning tools set forth in her book *Nonprofit Lifecycles* (2002). The lifecycle approach to nonprofit management is a “practical model that takes a holistic view of the entire organization and captures the stage-related growing pains that generally accompany each phase of development (Kenny-Stevens, p. 4).” Kenny-Stevens (2002) identifies seven stages in the lifecycle of a nonprofit organization. Beginning with the idea stage, the

stages progress to start-up, growth, and end with maturity, decline, turnaround, and terminal. Even though Huntington Family Centers has operated for nearly 90 years, a preliminary assessment of the organization's position within the lifecycle framework has identified it as being in the growth stage. By definition, the growth stage is identified when "nonprofit mission and programs have taken hold in the marketplace, but where service demand exceeds current structural and resource capabilities (Kenny-Stevens, p. 26)."

During the beginning stages of the ADVANS project HFC developed a preliminary business plan that identified several key areas for which capacity deficiencies could be addressed. Two of these challenges are critical to the growth of the organization, organizational structure and management, and facilities. "New programs are being developed and as the scope of the offering grows, the management of the programs as well as other aspects of the agency such as facility management is being taxed.(Huntington Family Centers, 2008)" The goal of the organization is to increase program services by 35% over the next two years.

#### Problem Statement

Huntington Family Centers Inc., located in the near-Westside of the City of Syracuse, NY, offers 25 programs which are divided into four categories, Adolescent Counseling Services, Youth Development, Family Education and Support, and Senior Services. The agency currently employs 75 people. Programs range in focus from preschool to services for senior citizens and are designed to address the needs of the neighborhood for which they are located. Although the agency's primary location is at

405 Gifford Street, it operates programs at 302 Burt Street and 402 South Avenue, which are located outside of the near-Westside community.

The primary building at 405 Gifford St. was built around 1955 with an addition that was built in 2004. It totals 22,000 square feet and serves 22 of the agency's 25 programs. As new programs are considered, HFC will be forced to rent space due to the lack of functional space at its primary location. Ideally, HFC would prefer to deliver all of its services at its primary location, where the organization can better serve the needs of the near-Westside community. A senior day program is operated at the South Ave. location for which they currently pay \$15,120 annually; this charge also includes the use of a van used to transport seniors who participate in the program. A continuing day treatment program operates at the Burt St. location for which the current rent is \$12,600 annually.

HFC has identified four mutually exclusive options, which could address these concerns. HFC owns the Adele Nelson Building located directly behind its primary location at 304 Seymour St.; however, the building is currently vacant and in disrepair due to mold and asbestos materials which would need to be sealed or removed prior to renovation. Moreover, they are receiving pressure from the insurance company to address the present condition of the building. Also, the neighboring property located at 310 Seymour St has been offered to them by the City of Syracuse for a negotiable price. Because of HFC's positive impact upon the local community and its strong relationship with the City of Syracuse, the possibility exists that this property could be acquired for one dollar. This property is also vacant and would require the same repairs as 304 Seymour St. The four mutually exclusive options to be explored are as follows:

*Option One*

The Adele Nelson Building can be demolished. Insurance and utility costs for the vacant building will be eliminated, and the parking lot will be expanded.

*Option Two*

The Adele Nelson Building at 304 Seymour St. can be renovated to include painting, carpeting, and structural repair. Actions will be taken to seal all asbestos materials, and mold will be removed. The building will also become compliant with the current standards of the Americans with Disabilities Act. These renovations will provide sufficient space to address the current capacity constraints felt at the primary location.

*Option Three*

The Adele Nelson Building can be restructured addressing each of the repairs in option two. Moreover, any asbestos materials will be removed rather than sealed, and a new floor plan will be created. By restructuring the floor plan the building will be accessible to senior citizens, and therefore create space for the relocation of the Huntington Adult Rehabilitative Treatment Services (HARTS) program. This will eliminate the cost of rent that is paid to operate this program.

*Option Four*

HFC could acquire the property located at 310 Seymour St. from the City of Syracuse. If this option is chosen, HFC will demolish both the Adele Nelson Building and the newly acquired building. A 10,000 square ft. addition to the primary building will be constructed that will address each of the previously mentioned concerns. This option will also allow for the relocation of the offsite programs to its primary location, along

with reserving 2000 square feet of space to rent, providing additional revenue for the agency.

Ideally, HFC would prefer to pursue option four by reason of its potential to alleviate current capacity constraints and offer the greatest potential for organizational growth and sustainability. However, the costs will require incurring long term debt which some stakeholders find unreasonable. Options two and three offer some potential to alleviate current capacity constraints and the cost is considerably less than option four. However, they will also result in long term debt and may not sufficiently address organizational growth and sustainability. HFC may receive community support for option one, and will not have any associated costs. Be that as it may, it does not address any of the organizations concerns regarding organizational growth, sustainability, or current capacity constraints. It will however, eliminate some maintenance costs from the budget and add aesthetic improvement to the neighborhood. This project will identify all of the associated costs of each of the four options and the potential effects of each option. The results of this project will provide Huntington Family Centers with a detailed assessment and recommendations, from which they will be able to address their current capacity constraints.

#### Research Question

- Which of the four options has the highest cost-effective ratio?

#### Conceptual Framework

Huntington Family Centers is considering this project because of organizational growth and pressure to attend to the Adele Nelson building. Moreover, its wish to relocate the two offsite programs to its primary location will allow it to retain control

over some of its resources. The dynamics that have lead HFC to this decision may be explained by internal and external controls that are exerting influence over the organization. Both resource dependence theory (Pfeffer & Salancik, 1978) and institutional theory (DiMaggio & Powell, 1983) provide concepts that attempt to explain how organizations adapt and conform to these controls. Beginning with the fundamental economic principles that foster internal decision making, this literature review will use resource dependence theory to conceptualize how the inherent demand for resources leads to organizational growth, and use institutional theory to conceptualize how coercive pressures from external institutions influence organizational structure.

### Literature Review

Much of the literature relating to organizational theory has been written within the context of the private for profit organization. Although nonprofit and for-profit organizations have many similarities regarding their dependence upon resources and institutional forms, there is a fundamental difference in the economic principles that guide their operation. Identifying this difference is necessary prior to addressing organizational theories because the efficient allocation of resources and the effectiveness of the organization create the legitimacy necessary for organizational survival. Legitimacy in the for-profit organization creates a coalition of investors, and consumers who actively engage in market transactions ensuring its financial viability. In the nonprofit organization it creates a coalition of board members, executives, staff, volunteers, donors, and the community who actively engage in the execution of its socially defined goals (Meyer & Rowan, 1977; Pfeffer & Salancik 1978).

*A Pareto Optimal Equilibrium: Capital or Social Gain?*

The primary difference between the for-profit and nonprofit organization is through the manner in which organizational resources are allocated. For the for-profit organization, the goal is to efficiently allocate resources or invest in potential markets to maximize profit. Through an ideal free market exchange, economists contend that a Pareto optimal equilibrium will naturally occur making it impossible for any one actor in the exchange to become better off than another. Therefore, in an ideal market, efficiency is a measure of how well the organizations' allocation of resources corresponds to the demands of its consumers and investors (Patton & Sawicki, 1993). The decision to allocate resources is free from any social value implications and is deemed effective when, investors, consumers, and the organization receive a mutual financial benefit (Ramanathan & Hegstad, 1982).

In contrast, the nonprofit organization allocates its resources for a collective or social gain guided by its mission statement and agreed upon by board members, executives, staff, volunteers, donors, and the community. The nonprofit social service agency must make value judgments regarding the needs of the community and in doing so; it is attempting to develop a social Pareto optimum (Ramanathan & Hegstad, 1982). Efficiency is a measure of how well the organizations' allocation of resources corresponds to the demands of board members, executives, staff, volunteers, donors, and the community. Participants enter this exchange not become better off financially, but to contribute to a larger collective good. Therefore, organizational effectiveness is determined not by the financial gain of participants but the ability of the nonprofit organization to achieve its socially defined mission (Ramanathan & Hegstad, 1982;

Kaufman, 1991; Rose-Ackerman, 1996). However, even with a clearly defined mission statement there still may be discussion and debate on how to effectively serve the needs of the community. The decisions that are made within the organization must consider many different and sometimes ambiguous options that all may be designed to achieve the same outcome.

### *Decision Making By Root or Branch*

Linblom (1959) developed a decision making model commonly referred to as the root or branch method. The root or branch theory was developed to address public policy choices by a bureaucratic agency; however the tenets of his theory may also be used to explain the underlying logic behind the decisions of the for-profit and nonprofit organization. Lindblom (1959) argues that the root method of decision making has a collectively defined set of values and a clear understanding of the means and the end. The root method, due to its lack of ambiguity, is therefore more conducive to empirical analysis. The branch method of decision making lacks collectively held values, and the means and end are ambiguous. Empirical analysis conducted with the branch method may yield many viable possibilities to achieve the desired end.

Because the decisions of a for-profit organization are made with the collectively held goal of maximizing profits, empirical evidence through market research can be produced that will offer the highest potential for capital gain, while also identifying the most optimal means to the objectified end. Nonprofit organizations do not have that luxury. When deciding on the most effective manner to allocate resources, the goals of the agency may not be collectively held by the board of directors, management, the donors or funders, and the community. Guided by their mission statement, the services



offered will vary due to internal and external forces that create problems in trying to objectify the optimal means necessary to carry out the desired end (Pfeffer & Salancik, 1973; James, 1983; Weisbrod, 1988; Bordt 1997; Galaskiewicz et.al., 2006).

For Huntington Family Centers, this decision will require the support and involvement of many different stakeholders, each holding a personal preference. Each preference will represent a viable option to advance the goals of the mission statement. Resource dependence theory provides a conceptual framework that separates internal decisions of resource allocation and the external managing of relationships. The differentiation between internal and external sources of organizational behavior may help clarify the decision making process.

*Efficiency vs. Effectiveness: Resource Dependence Theory*

Pfeffer and Salancik (1978) argue that the efficient allocation of resources within the organization is a measure of how well an organization is functioning. As important as this is to the functional operation of the organization it is often seen as a panacea for the organizations problems. To use a metaphor, if a vehicle were to represent an organization, then an appropriate efficiency measure would be to ensure that the vehicle is meeting the gas mileage standards set forth by the manufacturer. However, the acquisition of fuel and the market price of fuel are of equal importance if the vehicle is to operate effectively. Therefore, the external environment must warrant equal attention. An organization can be quite efficient in the allocation of resources, however if external demands upon the resources are not met, this can compromise organizational effectiveness. Effectiveness is an external control and “it reflects both an assessment of the usefulness of what is being done and of the resources that are being consumed by the

organization” (Pfeffer & Salancik, 1978, p. 34). External controls limit the ability of organizations to initiate internal change, and therefore should warrant equal concern (Morris, 2007). For the nonprofit organization, effectiveness requires successfully acquiring the resources necessary for its operation, and measureable outcomes that accomplish the goals of the mission statement.

Pfeffer and Salancik (1978) argue that “the key to organizational survival is the ability to acquire and maintain resources (Pfeffer & Salancik, p. 2).” This inherent need for resources forces organizations to interact with their environment, thereby creating relationships of exchange. Through the exchange of necessary resources, a dynamic of interdependency is created when each actor in the exchange mutually relies upon the other for its survival. Organizations are thereby constrained by and dependent upon other organizations that control resources. As a result of perceived constraint, organizations will attempt to manage their dependencies on external controls with the goal of maintaining autonomy (Greening & Gray, 1994). The relative degree of dependence, that an organization experiences is a direct result of the importance and concentration of its resources (Froelich, 1999).

The role of the nonprofit manager is to actively manage external constraints by strategically anticipating and responding to resource dependencies through the restructuring of its interdependent relationships. The restructuring of interdependent relationships for the nonprofit organization can occur through bypassing the source of the constraint by pursuing alternative sources of supply, by diversifying the scope of its services, or by expanding its current services to new markets (Greening & Gray, 1994; Froelich, 1999; Casciaro & Piskorski, 2005). Therefore, organizational growth “is an

intentional response to directly control the interdependence by either the domination or avoidance of exchanges (Pfeffer & Salancik, p. 133).”

For the nonprofit organization, the internal process of efficiently allocating resources and the external process of effectively managing interdependent relationships require the collective effort of the board of directors, management, the donors or funders, and the community. Assuming that the internal and external pressures felt by the organization are visible and identifiable, proactive actions can be taken to adapt to these constraints. However, when external pressures are the result of collective institutional rules they may be less visible and lead to conformity rather than cooptation.

*The Push to Conform: Institutional Theory*

External controls that exert pressure upon the organization may not only be the result of the mutual dependence of resources but may also come in the form of institutional authority. “Institutional theory focuses more specifically on the pressures and constraints of the institutional environment. Institutions are defined as regulatory structures, governmental agencies, laws, courts, and professions (Oliver, 1991. p. 147).” DiMaggio and Powell (1983) argue that there are three main types of institutional pressures that exert control over organizations. Coercive pressures are the result of legal mandates or influence from authoritative organizations. Mimetic pressures, which result from times of uncertainty within the organization and as a result of this uncertainty, the organization will conform to what it sees as an ideally accepted form. Finally, normative pressures are due to increased degrees of professionalization within the organizations’ particular field.

The process through which organizations conform to these pressures is referred to as competitive or institutional isomorphism. Institutional isomorphism is a rational strategy to enhance organizational position within the market for a competitive advantage. However, “organizations compete not just for resources and customers, but for political power and institutional legitimacy”, therefore institutional isomorphism and considers the political and social environment within which the organization operates (DiMaggio & Powell, 1983). From this perspective, the organization is rationally conforming to institutional pressures to satisfy the demands of regulatory structures, governmental agencies, laws, courts, and professions (DiMaggio & Powell 1983; Oliver, 1991).

In this way, resource dependence theory and institutional theory align conceptually. As organizations are interest driven and must react in response to environmental pressures, the reason that they do so is for legitimacy (Oliver, 1991). “Organizations which exist in highly elaborated institutional environments and succeed in becoming isomorphic with these environments gain the legitimacy and resources needed to survive (Meyer & Rowan, 1977, p. 352).” The organization will be recognized as legitimate by all of its stakeholders when it has effectively managed its external relationships, and conformed to rationalized authoritative institutions. For the nonprofit organization this means balancing the needs of the community with available resources, being innovative and reasonable in assuming risk, and communicating effectively with the board of directors, management, the donors or funders, and the community (Brinkerhoff, 2000; Hodge & Piccolo, 2005).

*Legitimacy: Effectively Addressing the Needs of the Near-Westside*

As both theories converge on legitimacy as an integral component of organizational survival, this may help conceptualize some of the factors that HFC must consider when assessing this project. The need for space has forced it to engage in an exchange with two other organizations creating two mutually dependent relationships. This project could potentially allow it to avoid these exchanges through the relocation of its two offsite programs to the primary location. Moreover, if the decision to build an addition to the existing structure is chosen, the additional space may offer the potential for increased autonomy and control over its resources.

This project represents an institutional isomorphic change to adapt to its external environment. The Rosamond Gifford Foundation and the ADVANS project is a deliberate attempt to create organizational sustainability through the implementation of proven capacity building strategies. This best practices approach to organizational change is a legitimized organizational standard and the successful conformation and adoption of these practices will enhance Huntington Family Center's legitimacy.

The four options being considered in this project range in their potential to increase capacity, enhance sustainability, and increase autonomy over resources. Each option will address some of these concerns. However, the costs associated with the options create apprehension. By addressing the external constraints that are forcing it to adapt to its environment, Huntington Family Centers will be better positioned to serve the needs of the near-Westside community, thereby substantiating its legitimacy in the eyes of board members, executives, staff, volunteers, donors, and the community. Therefore, an

analysis of the effectiveness of each option will aid Huntington Family Centers in the decision making process.

### Method

To evaluate the four options a cost-effectiveness model will be used. Similar in nature to a cost-benefit analysis, a cost-effectiveness analysis is used when consequences of actions or policies cannot be accurately determined. The benefits that Huntington Family Center hope to gain from a capital expansion may result in additional revenue streams, however the true value of the benefits will be reflected in increased services through organizational growth. Where a cost-benefit analysis would measure the costs of each option against future revenue streams, a cost-effective analysis measures the net present value of all costs against physical units of service. For the purpose of this analysis, the physical units will be represented in the number of people served by each potential option.

HFC has determined that action will be taken to address the problem. Therefore, an analysis of the cost and effects of each option will provide useful information for the respective decision makers. Cost-benefit and cost-effectiveness models are flexible in their application, can be tailored to address the specific needs and purposes of projects and can reveal conflicts among objectives by potentially exposing objectives that were not previously considered (Fuguitt & Wilcox, 1999). “Equally important, a properly conducted analysis explicitly states any and all assumptions and clearly identifies and describes factors that are not quantifiable. In these ways, the analysis facilitates decision-maker deliberation, providing useful information and illuminating issues for consideration (Fuguitt & Wilcox, 1999. p.16).”

### *Costs and Effects*

Each of the four options to be explored has associated costs that will be represented in the form of dollars. “The use of the dollar as a common denominator should permit the comparison or trading off of conflicting objectives (Patton & Sawicki, p. 337).” This does however create problems when certain intangible benefits can not be accurately quantified, and when stakeholders consider some costs to be too objectionable for the associated benefits (Patton & Sawicki, 1993). Therefore, where objectives cannot be quantified in dollars, physical units of measurement will be substituted to quantify the effects of each option.

Huntington Family Centers has solicited formal estimates for the costs of each of the four projects; they serve as the initial outlay costs in the cost-effectiveness model. Using an appropriate market interest rate, a discount will be made to determine the net present value of the costs of each option. The calculation of net present value corrects for the depreciation of money over time and represents the cost of capital. “Simply put, a dollar today is worth more than a dollar next year (Patton & Sawicki, 1993, p. 276).” Therefore, any costs considered in the analysis must be adjusted to reflect today’s value of money. For the purpose of this analysis a finance rate of 6% will be used in calculating the net present value. I researched searched several banks in Central New York and found the average finance rate to be roughly 6%. For the purpose of this analysis it will be assumed that the project will be financed for a term of thirty years.

The effects of each option will be represented in total number of people served per year for each option. Options one, two, and three will create additional space to relocate programs. The number of people served will be determined by the specific program that

makes use of the new space created by the option. These data were obtained from Huntington Family Centers' 2008 program statistical records, which includes the total number of people served for each of their 25 programs. The following table is a summary of each option.

Table 1  
Summary of Options

Option	Description
One	Demolish the Adele Nelson Building and use the space for increased parking.
Two	Renovate the Adele Nelson Building leaving the existing floor plan.
Three	Renovate the Adele Nelson Building creating a new floor plan.
Four	Acquire the adjacent property on Seymour St, demolish the Adele Nelson Building and construct a 10,000 sq. ft. expansion.

### Data Analysis

When choosing between mutually exclusive options the appropriate measure of calculation is the marginal cost-effective ratio. One major assumption of this type of analysis is that the options "are not repeatable and are divisible with constant returns to scale (Fuguitt & Wilcox, 1999, p. 286)." Each of the four options in this analysis are mutually exclusive, and are not repeatable. A return to scale is the measurement of the relationship between units of input and units of output. For the purpose of this analysis, units of input will be the cost of the associated option, and the units of output will be the number of people served by the option. The use of service volume, or number of people



served, as the measure of effectiveness will provide insight into which option will have the most impact toward the organizational mission. As mentioned in the literature review, when allocating resources, the goal of the nonprofit organization is to achieve the maximum social or collective gain from the investment. Therefore, the most effective option will be the one that serves the most people for the lowest cost.

Assumptions specific to each option were made and are explained as follows:

#### *Option One*

For this option, the primary cost is the quoted estimate of \$77,000. However, leaders at HF C believe that the organization could receive community support for this project and may not have to pay this charge. For the purpose of this analysis it will be assumed that Huntington Family Centers will not pay this charge. The effects of this option will not result in increased services but will result in compliance to institutional norms through aesthetic improvement. It will also result in increased parking space. Despite these benefits, it does not address the organizations established goal of organizational growth and sustainability and will not add space for program relocation. Accordingly, the costs of this option will be \$0 and the effects will be 0 units. For reference purposes, an analysis of the benefits of the elimination of utility and insurance costs for this option can be found in Appendix D.

To calculate the first option in a marginal cost-effective sequence it must be compared to a standard of no action. Therefore, it becomes necessary to calculate the costs and effects of no action. The net present value of the insurance and utility costs of the idle Adele Nelson Building amount to \$93,270 annually projected over thirty years, and will have no effect on the number of people served.

*Option Two*

For this option, the cost is the net present value of the quoted estimate and an estimate of operating costs projected over thirty years which totals \$250,603. The quoted estimate was amortized over thirty years with a down payment of 20%, which resulted in annual payments of \$5,880. There will also be an increase in utility costs of an estimated \$13,233 annually. This cost represents 40% of the main building's current annual charges minus the current charges at the Adele Nelson Building. The 40% assumption is derived from the difference in square footage between the two buildings. For a detailed description of the calculations of the costs of this option refer to appendix A.

To measure the effects of this option it was assumed that the Westside First program would be relocated the Adele Nelson Building. This program serves 1,076 people annually.

*Option Three*

This option would allow for the relocation of the HARTS adult day treatment program which is currently located offsite. Therefore, the annual rent cost of \$12,600, has been subtracted from the cost of this option. The cost of this option is the net present value of the quoted estimate and an estimate of operating costs projected over thirty years. As with option two, the quoted estimate was amortized over thirty years with a down payment of 20%, which resulted in annual payments of \$13,068. There will also be an increase in utility costs of an estimated \$11,909 annually. This option includes a furnace upgrade that will make the building more energy efficient. Holding the 40% difference in square footage constant, I reduced the utility costs by 10% reflecting a modest gain in energy efficiency. The total net present value of the cost of this option is

\$171,019. For a detailed description of the calculations of the costs of this option refer to appendix B.

To measure the effects of this option it was assumed that HARTS, the adult day treatment program will accompany the Westside first program in the Adele Nelson Building. HARTS serves 124 people annually; therefore this option will result in a total of 1,200 clients being served annually.

#### *Option Four*

This option will allow for the relocation of both the HARTS program and the Clover Corner Senior Day program which will eliminate \$27,720 in annual rent charges from the current budget. In addition, Huntington Family Centers will allocate 2,000 square feet of space to lease. HFC has estimated that this will generate \$15,300 in annual revenue. This option will also create additional space for future program growth and it has estimated that by year three this will result in \$29,438 of additional revenue (Huntington Family Centers, 2009). The total of these benefits, \$72,458, has been removed from the costs of this option.

The initial outlay cost for this option is \$1,750,000. This cost represents an estimate of \$175 per square foot that was offered by VIP Structures Inc. The quoted estimate was amortized over thirty years with a down payment of 20%, which resulted in annual payments of \$100,724. There will be an increase in utility costs of \$18,600. This figure was calculated at 60% of the current costs at 405 Gifford St, and includes a 15% gain in efficiency with the new addition. The 60% assumption is derived from the difference in square footage between the main building, and the new addition. Also, the current utility charges at 310 Seymour St were subtracted from the total. The total net present value of

the cost of this option is \$746,828. For a detailed description of the calculations of the costs of this option refer to appendix C.

To measure the effects of this option it was assumed that the HARTS adult day treatment program and the Clover Corner Senior Day program will be moved to the new structure. These programs serve 1,200 of people annually. This option will also provide additional space to accommodate some program growth. Therefore, for the purpose of this analysis it is assumed that one new program of average size will make use of this space. To estimate the number of people served as a result of program growth, I used the average of the total number of people served by all of the 25 programs, which is 462 people. Therefore, the total number of people served by this option is calculated as 1,662.

#### *Limitations*

It is important to remain cognizant that an options incremental cost-effective ratio is in comparison to the previous option and can only be interpreted in reference to the other options (Fuguitt & Wilcox, 1999). It does not provide a measure of feasibility but a measure of the most effective choice among mutually exclusive options. Therefore, appendices A, B, C, and D, can be used as a reference to compare the costs and benefits of each option. The net present value of the cost of each option is the monthly amortized payments of a thirty year mortgage multiplied by twelve. Also, options two, three, and four were calculated with a 20% down payment. The dollar amounts of the down payments for each option are as follows:

- Option Two \$20,425
- Option Three \$45,425
- Option Four \$235,000

Through discussion with Huntington Family Centers, I was able to ascertain which programs would potentially be relocated as a result of the increase space. During these discussions, HFC staff mentioned that if option two were chosen, the Family Support Network along with some case workers from Case Planning may be relocated to the Adele Nelson Building in lieu of the Westside First program. However, Westside First serves roughly 1000 more people annually and therefore proved to be a more valuable investment.

### Findings

Table two shows both the average cost-effective ratio and the marginal cost-effective ratio. The average cost-effective ratio can be explained as the net present value of cost in dollars for one individual served. This is calculated by dividing the net present value of the costs by the number of people served. However, this calculation alone will not factor the value of incremental increases in the effects of each option.

To determine the change in value for each successive option it is necessary to compare each option with the one before it. This is referred to as the marginal cost-effective ratio. Beginning with the option that yields the smallest effect, or lowest number of people served, and concluding with the option that yields the largest effect, or highest number of people served, the marginal change of each successive option can compare relative value between successive options. The marginal cost-effective ratio is calculated by dividing the change in the total costs between successive options by the change in total effect between successive options. The marginal cost-effective ratio can be explained as the net present value of cost on dollars for each additional person served

relative to the option before it. Therefore, a negative marginal cost-effective ratio represents a return or revenue gained for each additional person served.

Table 2  
Summary of Findings

Option	NPV of Total Costs	People Served (Effect)	Average C/E ratio	Marginal C/E ratio
One	\$-93,270	0	0	0
Two	\$250,603	1,076	233	319.5
Three	\$171,019	1,200	142.5	-642
Four	\$746,828	1,662	450	1246

#### *Option One*

This option results in \$0 cost and no people served. However, when compared to a standard of no action it does yield a benefit of \$93,270 projected over thirty years.

#### *Option Two*

The average cost-effective ratio for this option results in a cost of \$233 for each person served. However, relative to the costs and effects of option one, the cost of delivering services to an additional 1,076 people increases to \$319.50 per individual.

#### *Option Three*

The average cost-effective ratio for this option results in a cost of \$142.5 for each person served. However, the relocation of the HARTS program will bring additional revenue, and increase the number of people served. As a result, when comparing option three with option two, this option will yield \$642 in additional revenue for each person served.

*Option Four*

The average cost-effective ratio for this option results in a cost of \$450 for each person served. Due to the significant initial outlay cost of this option, when comparing it to option three the cost increases to \$1246 for each person served.

### Recommendations

*Recommendation One*

If timely action is a priority, option three offers the potential to be the most cost-effective solution to the problem. It will allow for the relocation of the HARTS Adult Day Treatment program and the Westside First Program adding additional revenue to the Huntington Family Center Budget. This revenue will cover all but \$498 dollars of the \$13,068 annual mortgage payment. Ideally, option four offers the potential to address most of the organizations concerns. However, the potential for organizational growth and increased revenue and services that will come with option four do not seem to warrant the cost. The projected benefits of this option, \$72,458 fall far short of the \$100,724 annual mortgage payment.

*Recommendation Two*

If time is not a priority, HFC could pursue option one, and acquire and demolish 310 Seymour St. Assuming that the organization would not incur demolition costs, this could be the first step in an extended plan toward growth and sustainability. Through the elimination of utility and insurance charges, this will result in annual savings of \$6,776. This figure invested annually at 3% interest and compounded annually will grow to

\$89,116 in ten years. This could compliment other sources of funding for future capital projects.

### Conclusion

Each option was analyzed as a mutually exclusive possibility to address the problem. From this perspective, option three proved to be the most cost-effective option. It offers the largest social gain for the relative cost. From a marketing perspective, it offers additional benefit in the elimination of one dependent relationship through the relocation of the HARTS program. The renovation of the Adele Nelson Building will also add aesthetic improvement to the neighborhood. The benefits of aesthetic improvement are intangible and difficult to measure. However, the shine of a newly renovated building will reflect the pride and hard work of the people at HFC and enhance organizational legitimacy within the community. However, with time a long term approach could achieve even greater results. As it stands, option four is cost prohibitive and may require further analysis and planning to achieve.



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## Appendix A

## Summary of Calculations for Option Two

Year	Cost	Operating Cost	total costs	discount factor	present value
1	\$5,880	\$0	\$5,880	0.943	\$5,547
2	\$5,880	\$13,233	\$19,113	0.890	\$17,011
3	\$5,880	\$13,233	\$19,113	0.840	\$16,048
4	\$5,880	\$13,233	\$19,113	0.792	\$15,139
5	\$5,880	\$13,233	\$19,113	0.747	\$14,282
6	\$5,880	\$13,233	\$19,113	0.705	\$13,474
7	\$5,880	\$13,233	\$19,113	0.665	\$12,711
8	\$5,880	\$13,233	\$19,113	0.627	\$11,992
9	\$5,880	\$13,233	\$19,113	0.592	\$11,313
10	\$5,880	\$13,233	\$19,113	0.558	\$10,673
11	\$5,880	\$13,233	\$19,113	0.527	\$10,068
12	\$5,880	\$13,233	\$19,113	0.497	\$9,499
13	\$5,880	\$13,233	\$19,113	0.469	\$8,961
14	\$5,880	\$13,233	\$19,113	0.442	\$8,454
15	\$5,880	\$13,233	\$19,113	0.417	\$7,975
16	\$5,880	\$13,233	\$19,113	0.394	\$7,524
17	\$5,880	\$13,233	\$19,113	0.371	\$7,098
18	\$5,880	\$13,233	\$19,113	0.350	\$6,696
19	\$5,880	\$13,233	\$19,113	0.331	\$6,317
20	\$5,880	\$13,233	\$19,113	0.312	\$5,960
21	\$5,880	\$13,233	\$19,113	0.294	\$5,622
22	\$5,880	\$13,233	\$19,113	0.278	\$5,304
23	\$5,880	\$13,233	\$19,113	0.262	\$5,004

24	\$5,880	\$13,233	\$19,113	0.247	\$4,721
25	\$5,880	\$13,233	\$19,113	0.233	\$4,453
26	\$5,880	\$13,233	\$19,113	0.220	\$4,201
27	\$5,880	\$13,233	\$19,113	0.207	\$3,963
28	\$5,880	\$13,233	\$19,113	0.196	\$3,739
29	\$5,880	\$13,233	\$19,113	0.185	\$3,527
30	\$5,880	\$13,233	\$19,113	0.174	\$3,328
Discount Rate	6.00%			NPV	\$250,603

## Appendix B

## Summary of Calculations for Option Three

Year	Cost	Operating Cost	Benefit	Total Costs	Discount Factor	Present Value
1	\$13,068	\$0	\$0	\$13,068	0.943	\$12,328
2	\$13,068	\$11,909	\$12,600	\$12,377	0.890	\$11,015
3	\$13,068	\$11,909	\$12,600	\$12,377	0.840	\$10,392
4	\$13,068	\$11,909	\$12,600	\$12,377	0.792	\$9,804
5	\$13,068	\$11,909	\$12,600	\$12,377	0.747	\$9,249
6	\$13,068	\$11,909	\$12,600	\$12,377	0.705	\$8,725
7	\$13,068	\$11,909	\$12,600	\$12,377	0.665	\$8,231
8	\$13,068	\$11,909	\$12,600	\$12,377	0.627	\$7,765
9	\$13,068	\$11,909	\$12,600	\$12,377	0.592	\$7,326
10	\$13,068	\$11,909	\$12,600	\$12,377	0.558	\$6,911
11	\$13,068	\$11,909	\$12,600	\$12,377	0.527	\$6,520
12	\$13,068	\$11,909	\$12,600	\$12,377	0.497	\$6,151
13	\$13,068	\$11,909	\$12,600	\$12,377	0.469	\$5,803
14	\$13,068	\$11,909	\$12,600	\$12,377	0.442	\$5,474
15	\$13,068	\$11,909	\$12,600	\$12,377	0.417	\$5,164
16	\$13,068	\$11,909	\$12,600	\$12,377	0.394	\$4,872
17	\$13,068	\$11,909	\$12,600	\$12,377	0.371	\$4,596
18	\$13,068	\$11,909	\$12,600	\$12,377	0.350	\$4,336
19	\$13,068	\$11,909	\$12,600	\$12,377	0.331	\$4,091
20	\$13,068	\$11,909	\$12,600	\$12,377	0.312	\$3,859
21	\$13,068	\$11,909	\$12,600	\$12,377	0.294	\$3,641
22	\$13,068	\$11,909	\$12,600	\$12,377	0.278	\$3,435

23	\$13,068	\$11,909	\$12,600	\$12,377	0.262	\$3,240
24	\$13,068	\$11,909	\$12,600	\$12,377	0.247	\$3,057
25	\$13,068	\$11,909	\$12,600	\$12,377	0.233	\$2,884
26	\$13,068	\$11,909	\$12,600	\$12,377	0.220	\$2,721
27	\$13,068	\$11,909	\$12,600	\$12,377	0.207	\$2,567
28	\$13,068	\$11,909	\$12,600	\$12,377	0.196	\$2,421
29	\$13,068	\$11,909	\$12,600	\$12,377	0.185	\$2,284
30	\$13,068	\$11,909	\$12,600	\$12,377	0.174	\$2,155
Discount Rate	6.00%				NPV	\$171,019

## Appendix C

## Summary of Calculations for Option Four

Year	Cost	Operating Cost	Benefit*	Total Costs	Discount Factor	Present Value
1	\$100,724	\$0	\$0	\$100,724	0.943	\$95,023
2	\$100,724	\$18,600	\$43,020	\$76,304	0.890	\$67,910
3	\$100,724	\$18,600	\$43,020	\$76,304	0.840	\$64,066
4	\$100,724	\$18,600	\$72,458	\$40,000	0.792	\$31,684
5	\$100,724	\$18,600	\$72,458	\$40,000	0.747	\$29,890
6	\$100,724	\$18,600	\$72,458	\$40,000	0.705	\$28,198
7	\$100,724	\$18,600	\$72,458	\$40,000	0.665	\$26,602
8	\$100,724	\$18,600	\$72,458	\$40,000	0.627	\$25,096
9	\$100,724	\$18,600	\$72,458	\$40,000	0.592	\$23,676
10	\$100,724	\$18,600	\$72,458	\$40,000	0.558	\$22,336
11	\$100,724	\$18,600	\$72,458	\$40,000	0.527	\$21,072
12	\$100,724	\$18,600	\$72,458	\$40,000	0.497	\$19,879
13	\$100,724	\$18,600	\$72,458	\$40,000	0.469	\$18,754
14	\$100,724	\$18,600	\$72,458	\$40,000	0.442	\$17,692
15	\$100,724	\$18,600	\$72,458	\$40,000	0.417	\$16,691
16	\$100,724	\$18,600	\$72,458	\$40,000	0.394	\$15,746
17	\$100,724	\$18,600	\$72,458	\$40,000	0.371	\$14,855
18	\$100,724	\$18,600	\$72,458	\$40,000	0.350	\$14,014
19	\$100,724	\$18,600	\$72,458	\$40,000	0.331	\$13,221
20	\$100,724	\$18,600	\$72,458	\$40,000	0.312	\$12,472
21	\$100,724	\$18,600	\$72,458	\$40,000	0.294	\$11,766
22	\$100,724	\$18,600	\$72,458	\$40,000	0.278	\$11,100
23	\$100,724	\$18,600	\$72,458	\$40,000	0.262	\$10,472



24	\$100,724	\$18,600	\$72,458	\$40,000	0.247	\$9,879
25	\$100,724	\$18,600	\$72,458	\$40,000	0.233	\$9,320
26	\$100,724	\$18,600	\$72,458	\$40,000	0.220	\$8,792
27	\$100,724	\$18,600	\$72,458	\$40,000	0.207	\$8,295
28	\$100,724	\$18,600	\$72,458	\$40,000	0.196	\$7,825
29	\$100,724	\$18,600	\$7,4582	\$40,000	0.185	\$7,382
30	\$100,724	\$18,600	\$72,458	\$40,000	0.174	\$6,964
Discount Rate	6.00%				NPV	\$746,828

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\*The projection of revenue from new program growth will not be realized until year three.

## Appendix D

## Summary of the Benefits of the Elimination of Utility and Insurance Costs for Option One

Year	Cost	Benefits	Total Costs	Discount Factor	Present Value
1	\$0	\$6,776	-\$6,776	0.943	-\$6,392
2	\$0	\$6,776	-\$6,776	0.890	-\$6,031
3	\$0	\$6,776	-\$6,776	0.840	-\$5,689
4	\$0	\$6,776	-\$6,776	0.792	-\$5,367
5	\$0	\$6,776	-\$6,776	0.747	-\$5,063
6	\$0	\$6,776	-\$6,776	0.705	-\$4,777
7	\$0	\$6,776	-\$6,776	0.665	-\$4,506
8	\$0	\$6,776	-\$6,776	0.627	-\$4,251
9	\$0	\$6,776	-\$6,776	0.592	-\$4,011
10	\$0	\$6,776	-\$6,776	0.558	-\$3,784
11	\$0	\$6,776	-\$6,776	0.527	-\$3,570
12	\$0	\$6,776	-\$6,776	0.497	-\$3,367
13	\$0	\$6,776	-\$6,776	0.469	-\$3,177
14	\$0	\$6,776	-\$6,776	0.442	-\$2,997
15	\$0	\$6,776	-\$6,776	0.417	-\$2,827
16	\$0	\$6,776	-\$6,776	0.394	-\$2,667
17	\$0	\$6,776	-\$6,776	0.371	-\$2,516
18	\$0	\$6,776	-\$6,776	0.350	-\$2,374
19	\$0	\$6,776	-\$6,776	0.331	-\$2,240
20	\$0	\$6,776	-\$6,776	0.312	-\$2,113
21	\$0	\$6,776	-\$6,776	0.294	-\$1,993
22	\$0	\$6,776	-\$6,776	0.278	-\$1,880

23	\$0	\$6,776	-\$6,776	0.262	-\$1,774
24	\$0	\$6,776	-\$6,776	0.247	-\$1,674
25	\$0	\$6,776	-\$6,776	0.233	-\$1,579
26	\$0	\$6,776	-\$6,776	0.220	-\$1,489
27	\$0	\$6,776	-\$6,776	0.207	-\$1,405
28	\$0	\$6,776	-\$6,776	0.196	-\$1,326
29	\$0	\$6,776	-\$6,776	0.185	-\$1,251
30	\$0	\$6,776	-\$6,776	0.174	-\$1,180
Discount Rate	6.00%			NPV	-\$93,270*

\*Choosing option one will result in \$53,441 of savings over the next thirty years.