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Cost/Benefit Analysis for Accommodations of Attendance Growth

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Abstract

This project looks into the multiple facets of an organization, in this case a church, and their need to accommodate growth with the limited resources the church has available. Proposals include upgrading the existing building, conducting multiple services, purchasing an existing building and building a new facility. For each alternative, the costs and benefits are analyzed. The recommendation is to which best addresses the issue of growth in a cost effective way and complies with the goals of the church.

Acknowledgement

Pastor Dave Jeffries, Robert Dunn and Scott Goddard of Bethlehem Bible Church, the team originally commissioned to look into expansion options, all contributed significantly with directing my research. David Botcher, a member of Holden Chapel, gave me a significant amount of insight on what happens when churches undertake building projects. Finally, and most importantly, I want to thank Professor Salazar for his commitment to working with me and steering me towards the goal of this project.

Table of Contents

| | |
|---|-----------|
| Abstract | i |
| Acknowledgement | ii |
| Table of Figures | v |
| 1. Introduction | 1 |
| 2. Background | 4 |
| 2.1. Bethlehem Bible Church..... | 4 |
| 2.2. Church Growth..... | 4 |
| 2.3. Church Facilities..... | 5 |
| 2.4. Cost/Benefit Analysis | 7 |
| 2.5. Holden Chapel..... | 9 |
| 3. Methodology | 10 |
| 4. Analysis Factors | 15 |
| 4.1. Physical and Legal Factors..... | 15 |
| 4.2. Functional Space | 16 |
| 4.2.1. Infrastructure | 17 |
| 4.2.2. Legal..... | 18 |
| 4.2.3. Environmental..... | 19 |
| 4.2.4. Financial..... | 20 |
| 4.3. What’s Been Done | 21 |
| 4.3.1. Initial Research | 21 |
| 4.3.2. Parking..... | 22 |
| 4.3.3. Elder/Ministry Leader Concerns | 22 |
| 4.3.4. Interview with David Botcher from Holden Chapel..... | 23 |
| 4.3.5. Study of Westfield’s Full Gospel Church | 24 |
| 4.4. Multiple Services..... | 25 |
| 4.4.1. Staffing..... | 25 |
| 4.4.2. Teachers..... | 26 |
| 4.4.3. Service Schedule..... | 27 |
| 4.4.4. Attendance..... | 27 |
| 4.5. New Building | 28 |
| 4.5.1. Existing Property Value..... | 28 |
| 4.5.2. New Property Size | 30 |
| 4.5.3. New Building Costs | 31 |
| 4.6. Church Financials | 32 |
| 4.6.1. Income | 33 |
| 4.6.2. Expenses | 35 |
| 4.6.3. Comparisons | 36 |
| 4.6.4. Future..... | 37 |
| 4.7. Other Church’s Case Studies..... | 37 |

| | |
|--|-----------|
| 4.8. Outlook..... | 37 |
| 5. Study and Analysis..... | 39 |
| 5.1. Background..... | 39 |
| 5.2. Growth Study..... | 40 |
| 5.2.1. History | 40 |
| 5.2.2. Trends..... | 41 |
| 5.2.3. Conclusion..... | 44 |
| 5.3. Existing Property | 45 |
| 5.3.1. Current status..... | 45 |
| 5.3.2. Building Size..... | 47 |
| 5.3.3. Conclusion..... | 48 |
| 5.4. New Building, Same Land | 49 |
| 5.4.1 Location..... | 50 |
| 5.4.2. Septic System | 50 |
| 5.4.3. Parking..... | 51 |
| 5.4.4. Future Expansion | 51 |
| 5.4.5. Costs..... | 51 |
| 5.4.6. Conclusion..... | 52 |
| 5.5. Multiple Services..... | 53 |
| 5.5.1. Staffing..... | 53 |
| 5.5.2. Actual Attendance..... | 55 |
| 5.5.3 Timeframe..... | 56 |
| 5.5.4. Conclusion..... | 56 |
| 5.6. New Building | 57 |
| 5.6.1. Selling Existing Property | 57 |
| 5.6.2. New Property Size | 58 |
| 5.6.3. New building Costs..... | 59 |
| 5.7. Purchasing an Existing Building | 61 |
| 5.8. Affordability | 61 |
| 6. Summary..... | 62 |
| 6.1. Recommendation..... | 62 |
| 7. Conclusion and Follow-up work..... | 66 |
| 8. Bibliography..... | 67 |

Table of Figures

| | |
|---|----|
| Figure 1 Sketch layout of the ground floor of BBC's Chapel | 7 |
| Figure 2 Seating arrangement of the ground floor of BBC. | 16 |
| Figure 3 Income of BBC from January 2007 through December 2009 | 33 |
| Figure 4 BBC expenses by group from 2004 through 2009..... | 35 |
| Figure 5 BBC attendance from 2007 through 2009 | 40 |
| Figure 6 BBC Seasonal attendance averages from 2007 through 2009 | 42 |
| Figure 7 BBC attendance with polynomial trend line..... | 43 |
| Figure 8 Sketch of BBC blueprint proposal with a different building location..... | 49 |

1. Introduction

A church can be seen as a private social organization where its popularity brings in more members. If one is to look at a church as a non-profit organization, they can often be wary of the swings in population and its corresponding income and therefore, they need to plan out cost effective means to meet the needs of the church. Some of these factors can easily be quantified and predictable. Others do not and thus add an additional level of consideration when planning to handle church growth. Most importantly, though, a church is a spiritual organization. There is a degree of precaution and sensitivity that must be made aware of when working with a church organization.

Church growth can be seen as active or passive. Active growth usually means the church is actively participating in an activity to draw more members into the church. These methods often involve the members seeking out people to invite to their church or even go as far as public advertising. A popular movement today would be the seeker-sensitive (or seeker-friendly) movement. The term is not an official one but rather those who oppose the methodology behind it coined it. This movement creates an environment meant to appeal to newcomers and encourage them to stay in the church.

Passive growth, on the other hand, is where a church opens the door to the public but doesn't have programs of its own to seek out new members. It's not uncommon, though, for the existing members to go out and personally evangelize regardless if the church has such programs or not. Churches that go along with this

method may be turned off by the methodology of other churches that do actively seek growth.

Churches faced with the prospect of a larger membership size often resort to several different ways of handling the growth. Many choose to have multiple services. According to LifeWay, one third of all evangelical churches go this route.¹ Some choose to expand into a new building, although not necessarily a chapel. Still, others may build an entirely new facility, usually a chapel.

Not all of these options for accommodating growth are ideal. Multiple services can potentially cause social disruptions on churchgoer relationships. Finding an ideal building for a church organization can be a challenging task if the appropriate church building isn't available on the market. Finally, building a brand new facility can add on a significant amount of debt to the church. And there is a time involved in designing, planning and building such a facility.

Bethlehem Bible Church (BBC) has publically stated in its many sermons that it is strongly against the idea of pursuing ways to increase income. This includes devising ways to have bigger offerings or for wealthier people to attend. The church is willing to work and be good stewards of what it has but is unwilling to commit to any plans requiring planning out income in the long run.

2008 was a year when the church felt explosive growth. Going from about 225 members to 275 members, attendance grew by almost 25%. At one point every single seat within the church was filled. It was during this time that a committee of elders and deacons was formed to look at possible growth options. \$20,000 in

¹ <http://www.lifeway.com/article/?id=163856>

research costs later and no solution, the project was stalled. The work they tackled had very specific goals, particularly studying the existing property.

What the church needs is a more general evaluation of all the other aspects of church growth. Interviews with the staff needed to be done to know how they would be prepared with different scenarios. Cost estimates needed to be done as well as financial reviews to determine what the church could afford. But most importantly, to identify what courses of action the church would need to take without compromising on its missions.

The purpose of this IQP study is to do conduct a broad preliminary cost/benefit analysis of several options the church can take to handle its growth problem. These options will include having multiple services, upgrading the existing property, building a new facility and purchasing an existing building. Along the way it looked into social and economical costs and benefits and did a general study of the church's financials. The end product of this IQP is a series of recommendations for BBC to help find a solution for its growth. To summarize, the recommendation is to have a split service for up to a year and in the mean time attempt to build a new chapel capable of handling up to 1000 people. Of course, the elders of the church decide any and all decisions but this report would be of significant value to them.

2. Background

The purpose of the background is to give some insight on Bethlehem Bible Church, church growth and facilities, and of cost/benefit analyses. The information here won't provide any information that's useful for the purpose of this study but will help in the understanding of it.

2.1. Bethlehem Bible Church

Bethlehem Bible Church is located at 307 Lancaster St in West Boylston, MA. It sits on about a 5-acre plot of land next to a lake and amongst a residential area. BBC is open to the public and for the most part doesn't participate in active growth the exception of an occasional downtown evangelism.

BBC currently has 2 full time and 2 part time pastors. They, along with several other deacons, serve on an elder's board. These elders in turn are in charge of different ministries throughout the church. Members within the church volunteer to be part of many of these ministries. Non-members are also encouraged to perform in some ministries, although the availability of these ministries is limited.

2.2. Church Growth

The growth of the Christian church can be traced back to the ancient Roman times. According to the book of Acts in the Bible, the apostle Paul goes out from Jerusalem and travels all around the Mediterranean spreading the Gospel. He plants churches in Galatia, Ephesus, Rome and elsewhere. While Paul is the most well known apostle, others were likewise commissioned by Jesus to perform the task of spreading the Gospel.

By the 16th century there existed the Eastern Orthodox Church and Roman Catholic Church, both of whom have expanded to most of the civilized world. These churches are similar in doctrine but differ on questions of authority. During this time Martin Luther, a priest himself, was distraught by the Church's practice of selling indulgences. He protested by nailing what was known as the 95 theses the door of a church. What eventually occurred came to be known as the Protestant Reformation with which a number of people left the Catholic Church and formed their own. There have been many other splits later on, both within the Protestants and the Catholic Church, although none as noteworthy.

Baptists are believed to originate as one of the original denominations during the Protestant Reformation. The unique stance of the Baptists was that they didn't believe in infant baptisms. Reformed Baptists are those who are followers of theology of John Calvin, an early 16th century Biblical scholar. Today, Christianity is the professed religion of upwards of 2 billion people. Bethlehem Bible Church is officially a Reformed Baptist church. Originally starting off as a group of 35 people meeting together, the attendees then in 1995 started the construction of the current chapel to meet their growth needs.

2.3. Church Facilities

A facility for a religious group has been around since the ancient times. Jews, of whom Christians believe Jesus was, used crude tents before erected a temple in Jerusalem to provide a place of worship. The original and most well known is as Solomon's Temple, as described in the First Book of Kings in the Bible. Throughout

history it has been repeatedly destroyed and rebuilt, albeit nowhere near as glorious as the original.

A church, which is defined as the organization not the building, doesn't always congregate in a chapel. The smallest of Christian churches tend to be home groups that don't have a dedicated building, a practice that began after Jesus' ascension according to the Book of Acts in the Bible. Some churches, such as Holden Chapel when they first started meeting, rent out a gymnasium or an auditorium. Mega churches, such as Lakewood Church in Houston, can grow so big as to require a stadium to fill its many visitors.

The need for a facility often goes beyond a place to sit down to hear a sermon and worship. Many churches provide special classes for children and young adults to teach them lessons more suitable for their age. Also, special nursery rooms are also available for parents with newborns or toddlers so that these children not interrupt a service in progress. More elaborate facilities may include a gymnasium and a hall for events such as weddings.

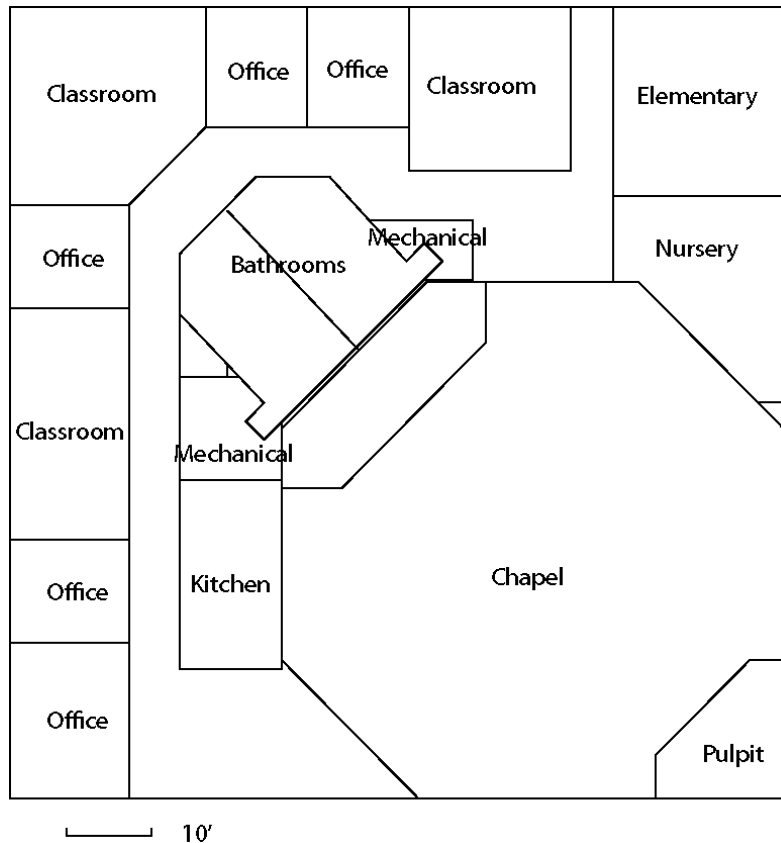


Figure 1 Sketch layout of the ground floor of BBC's Chapel

BBC's chapel is built to center around a typical worship service composed of singing and a sermon. As a result, the worship area consumes floor space. Included are several rooms for administrative purposes and classrooms as well as a kitchen. The main worship area can also be used as a miniature gymnasium or dinner hall when all the seats are removed. Pictured above is scaled sketch of the ground level of the chapel (Figure 1).

2.4. Cost/Benefit Analysis

A cost/benefit analysis is a broad term that describes the purpose of this project. Britannica describes it as "...the attempt to measure the social benefits of a

proposed project in monetary terms and compare them with its costs.”² The analysis being done here really tries to look at solving the problem of managing growth while being always aware of the goals of BBC. The idea of a cost/benefit analysis isn’t conceptually hard to grasp. Such an analysis is ideal if there are no decipherable solutions for a particular problem. In the case of church growth, for example, while there may be an obvious benefit of being able to handle more attendees, there are also quite a few potential downsides such as the degradation of unity within the church and staffing issues.

In the case of BBC, the objective of the analysis is to find the best route that will not only be financially viable but also meet the needs of an expanding attendance size. While space is an important factor, social related topics that don’t have a financial value also play a role. In doing such an analysis, determining an equivalent cost to social sacrifices, such as larger classrooms for children, can be difficult to determine. As it stands, staffing is in a comfortable position. The student-teacher ratio for Sunday school children is ideal and the church would like to keep it this way should any changes be made.

An analysis typically follows with a recommended course of action. While the intention of this project is to provide BBC with a recommendation, the end decision will still rest with in the hands of the elders. Any and all recommendations considered need to conform to the goals of BBC. Being a member of this church myself, recommending something otherwise would actually personally reflect on me.

² <http://www.britannica.com/EBchecked/topic/139466/cost-benefit-analysis>

2.5. Holden Chapel

Holden Chapel is located at 279 Reservoir St in Holden, MA. While this site wasn't attended for this study, it is nevertheless used as an example of church growth in recent times. Like BBC, it started off as a group of families meeting together in 1969. As time passed, they moved into a gymnasium before finally building a new facility to hold up to 1000 attendees. The current facility contains a gymnasium and an elementary school, both of which would be of interest to this study.

3. Methodology

Methodology describes the process and procedures for which the data and information is attained. Compared to a scientific paper, methodology for this report doesn't have as much importance. The vast majority of what was done to find the information for this analysis was either personal interviews or simple book and online research.

Interviews first started with the original committee that BBC formed to look into church expansion in 2008. This was a team composed of Scott Goddard, Robert Dunn and Pastor Dave Jeffries. The former two are professional environmental engineers and did some of the onsite research of the current property themselves. Pastor Dave oversaw the project and directed the operation. Several phone interviews were done over the course of the project with all three of them. A formal meeting did take place between Scott and I to discuss a range of topics relating to the research that has already been done and to determine the value of the current property.

Next to be interviewed were those who had a leadership role in the various ministries of the church via email. 12 forms went to various ministry leaders and 4 to the four pastors. Each group had a different form relating to their line work. In all, only 6 of them came back, 4 from the ministry leaders and 2 from the pastors. The questions were mostly yes or no questions to not take too much of their time but the participants were asked to elaborate if appropriate.

The form intended for the pastors had the following questions:

Current Status

1. What is your name and position within the church?
2. What do you think of the current building's location in accomplishing the goals of the church?
3. How well does this building meet the goals of the church when it was first built or when you first became a deacon?
4. In what ways do you feel that this church meets or exceeds the requirements of current ministries?
5. In what ways does it fall short of current ministry needs?
6. Are there any ministries or functions that you would like to have that cannot happen due to any limitations of the building?
7. Ideally, at what percentage of maximum capacity of the building do you feel it's necessary to have an alternative solution, such as split services or new building?

Split Service

1. Should the decision to split the service in two be made, would your role require you to attend both services?
2. If so, would you be consistently able to attend them both? If you can't attend both services, would your role be something another elder can handle at the timeslot you're not there?
3. What timeslots do you foresee happening and how many people per timeslot, as a percentage of the total membership, would come?
4. Besides being able to handle an increased growth, what other benefits do you foresee from having a split service?
5. What kind of negative impacts do you foresee from having a split service?
6. Would you consider a split service as a reasonable, permanent solution or a temporary, transitional solution? If temporary, what's the longest ideal length you'd support?

New Building

1. If the decision to build a new building were made, how would it meet the goals of the church?
2. What kind of location would you like the new building be? (Ex: downtown, suburbs, a specific city)
3. What kind of functions would you like the new building to accommodate and what kind of priority do they have? (Ex: fellowship hall, gymnasium)
4. Ideally, when would you like the new building completed?
5. What kind of additional equipment would you like the church to have? (Ex: projectors)
6. What kind of new ministries would you like to have available?
7. In terms of the design or location of the building, is there anything you would like avoided?
8. What considerations do you have for church growth once a new building is built?
9. Any personal comments or suggestions?

The form for the ministry leaders had the following questions:

Current Status

1. What is your name and what ministry you are involved in?
2. Does your ministry currently use a room in the church? (If not, skip to the next section)
3. Which room and at what times?
4. On average, how many people altogether occupy the room for this ministry?
5. Do you feel the size of the room is sufficient?
6. If so, how much growth do you think it allows for?
7. Are there any large pieces of equipment that you require?

Split Service

1. If the elders decided to split the Sunday morning service into two, would your ministry be affected? (If not, skip to the next section)
2. If asked, would you be able to consistently attend both services to perform your ministry tasks?
3. If not, would finding someone to assist you be difficult?
4. In terms of your ministry, do you foresee any potential benefits from a split service?
5. In terms of your ministry, do you foresee any potential problems from a split service?
6. If a split service option were only for a predetermined length of time, would it change any of your previous answers?
7. In terms of your ministry, is there anything else that must be kept in mind should the elders decide to go with a split services option?

New Building

1. If the elders decide to build a new church, what ideal size room would your ministry need? (Rough estimate of dimensions or accommodation of a certain amount of people)
2. Would there be any special equipment you'd like that is not available in the current building?
3. Do you have any requirements or needs that could be sharable across other ministries? (Ex: copier or projector)
4. What functions would you like added that would contribute to your ministry and how important would it be? (Ex: gymnasium)
5. Would you feel your room would be sharable with a different ministry in a different time slot? If so, any limitations?
6. Would your ministry require proximity to another room/function? If so, which one?
7. In terms of church accommodations, how would the growth in membership size affect your ministry?

Most of the answers came back without unexpected results. The answers that were of particular interest were those of scheduling multiple services from the

pastors and staffing and facility needs by the ministry leaders. Scott Walkden's, in particular, had quite a bit to say so I scheduled a formal meeting with. This meeting was about 2 hours long and the questions pertained mostly to the Sunday school ministry he was responsible for finding teachers for.

On the 17th of December I went out to Holden to interview David Bother. He has been a member of Holden Chapel since its inception. No formal questions were prepared. Instead, I came prepared to ask mostly about the church history and of the elementary school that they have. The interview took roughly an hour or so long.

Church finances information was retrieved largely through the help of Barbara Marzinsky, who handles the church expenses, and Fred Thibault, who handles the church income. They've provided Excel sheets complete with data from 2004 for the expenses and 2007 for income. Fred also provided the data for church attendance from 2007.

Also provided by the church were a series of blueprints. These blueprints contained plans for both the interior of the chapel and exterior features. There was only one design, the current one, among all the interior blueprints. There are a couple of proposal blueprints on the exterior blueprints. These included location and layout of the septic system and parking lot. Among them were also a couple of blueprints containing proposed placement of the building in locations other than the current one. These blueprints were largely used to research space limitations and hypothetical locations to place a new building.

Much of the research on septic systems and construction costs were done online. <http://www.reedconstructiondata.com> was a common stop as the owner of

the site also publishes volumes on construction costs every year. The website was far easier to locate construction information than trying to find potentially out of date books.

Lastly, the town of West Boylston provides a website (www.westboylston.com) that contains the bylaws on all construction projects within the city. Also included are meeting notes between the town boards and developers on various construction proposals.

4. Analysis Factors

The purpose of this section is to provide the researched knowledge of the topics to be discussed in the analysis section. Information on each topic that's relative to the study acquired by the methods in the methodology section is all contained here. While it may make it difficult to read this report straight through from beginning to end, the intention is to separate data, facts and information from the real analysis.

4.1. Physical and Legal Factors

One of the first areas of research was to study the existing space. There can be several factors limiting the maximum capacity of a church. Some of these limitations are physical or legal in nature; these limits are hard set and cannot be broken. Others are soft limits. Such limits are those that indirectly affect church service attendance. These limits can be related to such factors as location and demographics. The intention of studying the existing space is to identify which of these factors affect BBC and how significant of a role they play.

While there can be a very extensive list of possible growth-limiting factors, the focus will be on those that have the most impact on BBC right now. With physical limitations, the three major areas are seating capacity of the chapel, the infrastructure capacity and legal code.

4.2. Functional Space

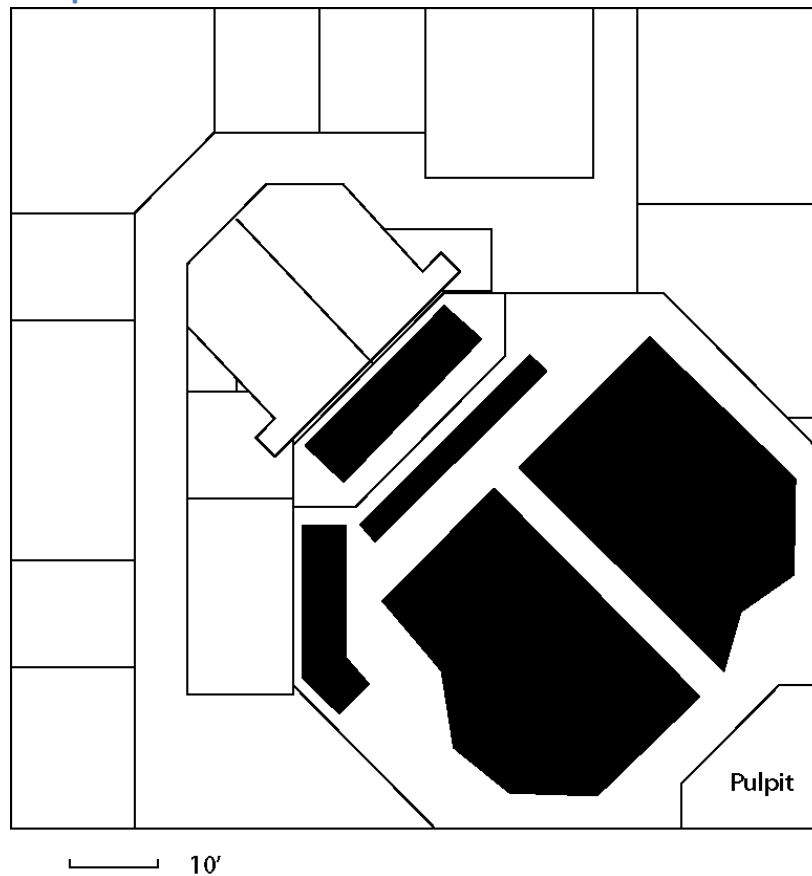


Figure 2 Seating arrangement of the ground floor of BBC.

The ground floor and a mezzanine divide the church's chapel into two levels. The ground floor is then further divided into 3 sections, a left, right and rear when facing the pulpit, as shown by the darkened areas above (Figure 2). There are also a few rows of chairs near the entrance separate from the two sections. These rows primarily allow wheelchairs to be put right next to them. Rather than pews, the church utilizes chairs that interconnect to each other, allowing a definitive count on the seating available. Altogether, the ground floor contains 269 seats and 6 possible wheelchair slots. Not including the wheelchair slots, there is a total seating capacity of 308. The total area of the main worship area is 3017 sq ft, including the pulpit.

The mezzanine is divided into 3 rows, 12, 14 and 13 chairs respectively, giving a total capacity of 39 seats. There is a possibility of putting in about 2 to 3 more chairs if needed. The ground floor contains a baptismal tank underneath the rear set of rows. On most Sundays, this is covered up and allows the placement of 2 rows of chairs, 14 and 13 chairs, respectively. However, on days when water baptisms are performed, these seats are unavailable.

In 2007 the layout of the chapel received a slight modification to what's currently shown above. The pulpit moved from its opposite corner to where it is right now. Where the pulpit was lay a new baptism pool. What may have been a decent strategy to expand was to convert all the rooms between the corridor and the chapel and remove the walls that connect those rooms and the chapel. However, the designers of the building placed all the piping-heavy rooms within this area and the classrooms/offices on the outer edge.

4.2.1. Infrastructure

When the church was originally built, the intended capacity as described on the architectural blueprints was 350 people. The septic system, according to the blueprints, had room for 43% growth. This would yield a maximum physical capability of handling 500 people. With the sanctuary entirely filled and the all the classrooms full, 500 people would be the upper end of what the church is currently capable of handling. The current septic system takes up an area of 80 by 32 feet. The proposal blueprint for the current property contained a location for a possible future play field but it was never built.

Septic system design is a major project all on its own. Generally speaking, medium and fine sand tend to be the best soil types. Clay happens to be the worst. Such soil, due to how slowly it absorbs, will often require larger drainage fields. An important note on septic system design is that they require being built under an area that gets very little to no surface disturbance. This means building a parking lot over it or placing it underneath an area constantly treaded upon cannot be done. Doing so will result in soil that is further compressed and thus drain even worse. The property currently resides next to wetlands so it comes as no surprise that the soil there contains a lot of clay.

4.2.2. Legal

There are a few legal factors that are limiting the expansion of the church in its existing locale.

Running through the middle of the property there are power lines. Power lines limit construction, but not entirely; there usually is a predefined area that they cover along with some tolerance known as the right of way. This is usually dictated by local codes. For the church's current location, buildings, including rooflines, cannot be constructed within this area. In West Boylston, according to the original blueprints of the church at the time it was built in 1995, buildings must have a minimum of 100 feet right of way, i.e. 50 feet parallel from the central path of the power lines.

West Boylston town laws require a minimum of 25 feet setback for a front yard. The front yard is described as the area between the road and the edge of the building. Currently, the church stands at 36 feet from the road. While technically the

church can expand in that direction about 11 feet, it would also cut into the handicap vehicle parking area. Furthermore, the ground level of the building is significantly lower than the road that it's near, creating its own set of problems, as described later.

4.2.3. Environmental

A large part of the original purchased property was wetlands. Even though some of the original property has been sold off, wetlands were still an issue. Essentially, no construction whatsoever can be done on it. Even parking over wetlands is prohibited. Due to environmental regulations of the town, nothing can be done to convert it over to some kind usable property.

Since this area doesn't have a sewage system, it consequently requires properties to have retention basin. A retention basin is a man-made pond that collects rainwater runoff to prevent erosion of nearby water systems by varying the rate of outflow. It differs from a detention basin in that it can hold water indefinitely. To have a retention basin, properties have to be designed so that rainwater runoff flows in the direction of the basin.

Currently, the parking lot is composed of gravel rather than being paved. This allows for some of the rainwater to be absorbed by the ground before reaching the basin, thus allowing for the basin to be smaller in size and giving more room for development. Another advantage to the current property is it's its sloping ground. The ground slopes in a northeastern direction. The retention pond happens to be located in the northeastern corner of the property and underneath power lines. The current size of the basin is estimated at 160 sq ft.

On the eastern side of the property lies a wall made up with hay bales. Its purpose is defined as the following: A straw bale barrier is a series of straw bales placed on a level contour to intercept sheet flows. Straw bale barriers pond sheet-flow runoff, allowing sediment to settle out.³ Consequently, this requires a certain amount of a buffer zone. Unfortunately, laws pertaining to their use could not be found. It was likely left up to the town's Conservation Committee to decide if the distance was sufficient.

There is also the problem of the soil samples. Scott Goddard, being an environmental engineer, took soil samples of the existing land. From his findings it appears that while expanding the existing building or building a new one on the same property won't appear to be much of a problem, upgrading the existing septic system will likely be. While a detailed analysis is beyond the scope of this paper, suffice to say that the church is grandfathered into its existing setup and upgrading the existing unit won't be possible. Completely replacing it is still an option but the cost becomes much more significant.

4.2.4. Financial

Financial limitations can be the end-all, be-all of all projects, not just churches. Simply put, if a church doesn't have the sufficient funds or income to support any kind of construction or new staff, their options become severely limited. It doesn't matter how well every other piece falls into place. While a further analysis of the current financials will be shown further on, according to pastor Dave, the current year's budget will be the intended baseline for the years ahead.

³ <http://www.cabmphandbooks.com/Documents/Construction/SE-9.pdf>

Throughout the church's history, it has never run in the red. With the exception of the building itself, it hasn't taken out any major loan. While only the past three years of financial records are available, it was affirmed by several deacons that there was never a point when the church ran out of money. According to the total income vs. total expenses charts, 2007 and 2008 were both years when the church spent more than it earned. However, this was due to one-time purchases that the church felt it could afford. The income primarily came from the selling of chunks of its properties and was used to buy items such as a piano. The bottom is that the church did not feel that it was over spending.

4.3. What's Been Done

4.3.1. Initial Research

Back in late 2008 a committee was formed to investigate options on the physical expansion of the church. This team performed soil samples on the existing property, consulted with the town on expansion options and looked at a few properties in the area as a possible area to relocate. One in particular was located directly across the street from the church. This property, while flat and large, not to mention very close, was more than half wetland. In essence, it actually had less developable space than the existing property. On a positive note, it was discovered that a street very close to the church, Lancaster Meadows, could be used for off-street parking if necessary. After spending about \$20,000 and come to no positive resolution, the committee decided to suspend the project.

4.3.2. Parking

Even though according to the original blueprints there was supposed to be a paved parking lot placed in, it has always been gravel. Since the growth of the church, parking issues have steadily arisen. According to Lifeway, an organization that's specialized in establishing churches, there is an average of 2.0 to 2.5 people per car. According to the committee, in BBC's case it falls in that range with an average of 2.1. At the time the church hit it's record, there was around 170 cars.

Being a gravel parking lot, there aren't any lines drawn into the ground. Parking, as a result, becomes inefficient. Lacking official parking boundaries also, the rough estimate of space used for parking is 1.8 acres. At 170 cars, the church is only managing 94.4 cars/acre, well below the 100 to 110 cars/acre standard given by LifeWay. The church decided to hire a contractor to provide an estimate on the cost of paving the entire lot. The quote came back as \$750,000. That's $\frac{3}{4}$ of the way to the rough value of the entire land and building! At that cost, paving became out of the question.

4.3.3. Elder/Ministry Leader Concerns

One specific problem that was brought up by 3 people within the church during the interview process was the location of the dining area. Currently, the existing chapel is used for that purpose; there is no separate dining or fellowship hall. While at first this was thought to be a feature, it has become problematic in a major way: It gets the main chapel really unsanitary. Cleaning it up requires a process of removing all the chairs and putting them back in place, a long and tedious process if done alone. Children also share this same chapel during Thursday night's

weekly meet. Safety issues are a concern should the floors not get cleaned after events involving food occur right before the meet.

4.3.4. Interview with David Botcher from Holden Chapel

David Botcher is a member of Holden Chapel since its inception in 1969. Professor Salazar provided him as a resource because of his personal experiences with multiple services, building a new building and building additions to it. He also has knowledge of the budget figures especially in reference to the cost of the elementary school that Holden Chapel has. His experiences are ones that BBC could face in the near future.

The people of Holden Chapel changed locations and added space to facilities around four different areas including a high school cafeteria before settling in its current location in 1978. It was during that year they finished the first part of its current building. In 1981 they added offices, a gymnasium and about 4-5 additional classrooms. Due to growth they resorted to having split services in 1988. In 1992 they built a balcony to seat an additional 200 people. In 1994 they built and opened up the K-5 Christian Academy.

By 1995 the church was outgrowing its existing property. At this point there was 650-750 attending the services. Their existing mortgage was paid off and they took out an additional \$1.3 million to expand. By December of 1996 they moved into the third phase of their construction. Classes up to 8th grade were offered by 1997. In 2001, the new mortgage was paid off and the church had a building with a 1000 people capacity. Overall, the church has 20 acres of land to use, not all of which is fully developed but can be in the future.

Four years ago, though, there was a split in the church resulting from reactions to the decisions of the pastoral staff. Several families left the church and currently there are about 300 people who attend the Sunday morning service. Many of them do so due to a vested interest in the school. When asked, more than half of the current attendees have a child who currently attends the school. The school itself sports about 115 students of which the church subsidizes a total of \$20,000 for their tuition every year. The current cost per child to go to the school is \$4,600 per year.

4.3.5. Study of Westfield's Full Gospel Church

I've personally attended this church from 1992 to 2004. I've seen it build two additional buildings and have multiple services in its efforts to satisfy its ever-expanding base. Throughout its lifetime membership gain was largely fueled by immigration. Initially, the church started off as a small Polish church before becoming Russian/Ukrainian earning a membership count of about 75 people before having to build a new building. The building was built right behind the original one during the mid-90s and was used for about 5 years. In 2000, work on a new building started due to, once again, expanding membership.

This new building opened up in 2002 with a price tag of \$2.2 million to purchase the land and fully erect it minus the paving. The chapel's intended interior capacity was 1000 people and sat on a piece of land roughly 6 acres in size.

However, a fellowship hall was built alongside the chapel that had a moveable wall. This wall could be opened up to comfortably provide up to an additional 300 people a view to the pulpit. In 2003 there was a major split amongst several families who

were dissatisfied with the leadership of the church. Two additional groups formed and left the church to found additional churches in the area. Despite this, growth exploded and by the end of 2004 the church was over capacity at 1500 people. Currently, due to space and parking limitations this is where the church currently hovers. With 1500 people, though, not everyone has an ideal place to sit within the fellowship hall to both see and hear the pastor.

4.4. Multiple Services

Having multiple services is not uncommon. While statistics aren't available as to what percentage of churches in the US have them it is frequently used as a solution to solve growth problems. Urban churches are more likely to use them as long-term solutions due to the difficulty in finding larger and still affordable locations. Most often it starts as two morning services and can grow to three. A typical Catholic church, for example, has a service at 8:30 am and at 10 am.

4.4.1. Staffing

When a church switches to multiple services, logistically the biggest obstacle a church faces is staffing. Staffing requirements for a church range from something as simple as ushers and greeters to the skilled, encompassing teachers and audio/video technicians. More important than all these groups would is probably a pastor; if one isn't available for a service to provide a sermon, multiple services become a self-defeating option.

Unlike a school or daycare, parents in a church typically stick around to participate in an activity of their own when they bring their children to Sunday school classes. In a church that has multiple services accommodations are made for

the parents. Every church is different in this respect. Some provide supplementary education or sermons. Others provide some form of a social activity. Regardless, the church would have to actively prepare and be staffed during these times.

Audio/Visual technicians are also required at each service and may have specialty training to operate the church's equipment. Occasionally they may be managing the microphones and projector. For the majority of churches, though, they sit behind the soundboard most of the time. Even in churches up to 5000 people only a handful are needed. They are needed nonetheless.

4.4.2. Teachers

Teachers, particularly for children's Sunday school classes, have a high staffing priority. For churches bigger than 300 people in size they often have some form of educational experience and thus can be specialized even down to a grade level. For churches mindful of class sizes, bigger churches would obviously require more teachers.

During the main service the church has several teachers that, while trained, may not be professional or have comparative experience. A member of the church, Scott Walkden, is placed in charge with the curriculum and finding teachers. His policy is 10 students per teacher and he breaks them by grade level. There are a few grades where there are an abundance of students and he ends up splitting it into two separate classes.

During an interview with Scott, he did express some level of difficulty with finding teachers for Sunday mornings. Even though lacking any major experience prerequisite, he's having a difficult time simply finding those whom have a

willingness to teach. Weekly events, on the other hand, aren't as problematic for him.

4.4.3. Service Schedule

Arrangement of multiple Sunday services can vary widely. Most common are two consecutive services with the second ending around noon. BBC's currently has an adult Sunday school and the main service from 9am to 10am. The main Sunday morning service starts at 10:15 am and ends at noon. While there is also a 6pm service, the attendance is quite low in comparison to the morning services and therefore insignificant.

When the elders asked what their planned service schedule would be should the church decide to go with multiple services, they wanted a main service followed by the adult Sunday school and ending with another main service. Pastor Pardeep in particular wanted it to be arranged in the following manner:

First Service: 8:30 am – 10 am
Adult Sunday School: 10:15 am – 11:00 am
Second Service: 11-15 am – 12:45 am

4.4.4. Attendance

When pastor Pardeep mentioned those time slots, he mentioned attendance would be 30%, 25% and 60% respectively. No combination of these numbers adds up to 100% and if it is assumed that those numbers would be accurate, it would suggest that 10% of the members would skip both main services and attend the adult Sunday school only. In all my attendance of Sunday school services, there is no one that I ever recall seeing who's attended the Sunday school class and not attend the regular service (although it technically could happen). This suggests that these

numbers were guessed and shouldn't be relied upon for too much accuracy.

Nevertheless, it does say that the pastor assumes there will be greater attendance during the second service and isn't expecting an issue of crowding during the adult Sunday school.

Personal experience tells another story. At my time in the Full Gospel Church in Westfield there was a point when the church decided to go with multiple services also because of the need to accommodate a growing church population. The first service was from 9 am to 11 am followed by the second at 11 am to 1 pm with no adult Sunday School. Transition between services did get tricky as there wasn't a set break in between the two but everything somehow managed to work week after week. From a rough estimate, the average morning service brought in 60% of the members and the second brought the other 40%. An interview with David Botcher of Holden Chapel pretty much told the same story.

Demographically, there haven't been any major studies on the matter so all that's left to rely on are personal experiences and interviews. Generally, the first Sunday morning service has a larger population. This service tends to have those who are middle-aged and older. The second service is smaller in size and has a large younger crowd as well as more couples with small children. So, in the absence of objective facts, this portion has to be taken with a grain of salt.

4.5. New Building

4.5.1. Existing Property Value

From interviews with Scott Goddard, placing a value on the existing property is very difficult. Part of is the fact that it sits near wetlands. Another reason is that

power lines go straight through the middle of the property. The current economic times also plays a significant role. Combine all that with the fact that it resides amongst a residential area and now the scope of the problem begins to form.

Berkeley did a study of the different studies done on the subject of power lines and property value and found very varied results on overall value between 0 and 5% between houses that have power lines near them and those that didn't.⁴ One thing that was conclusive was the *perception* of loss in property value amongst both real estate professionals and homeowners.

According to Scott's personal estimate, he places the overall value of the property at \$1 million, \$400k for the land and \$600k for the building. However, this is an optimistic scenario. Due to the condition of the soil and other building impediments, his worst-case value estimate for the entire property as a residential property is \$100k, a factor of 1/10th!

Ideally, the best client for this property is another church group, preferably smaller than BBC's. Nobody has come forward with any interest to purchase the property for that use. This isn't surprising since BBC has made no attempt to sell it or let people aware of intent to sell.

The option has been brought up to rezone the area to what's known as a "commercial/limited industrial" zone. Rezoning is a relatively inexpensive procedure costing about \$3,000 in attorney fees. Doing so, though, requires the approval of West Boylston's zoning board. From reading through the town's many *Planning Board Minutes* on their website getting such an approval would require the

⁴ <http://staff.haas.berkeley.edu/kroll/pubs/tranline.pdf>

church to have an explicit plan on what the existing property will be used for. Simply saying it can be used for office space without any known future tenants would be insufficient.

The difficulty in making this a light industrial area is the lack of a paved parking lot. As mentioned before, the unofficial cost of paving the entire lot is \$750k. With an estimated property value of 1 million, such a price tag would be difficult to justify. From discussions with Scott Goddard it's guessed that the value gained from putting in a parking lot wouldn't cover the cost of putting it in.

4.5.2. New Property Size

LifeWay releases a document titled *Rules of Thumb: Space and Dimension Recommendations*.⁵ As the title suggests, it provides general guidelines on what to expect the needs of a church to be should they choose to start a new church building project. No specific requirements have been made nor have there been any proposals for a new church so at the moment only general area requirement values will be needed.

The following values would be the most useful for this study:

- 1 acre per 100-125 in attendance on site at one time
- Outdoor recreation: 2 to 4 additional acres
- One [parking] space for every 2.0 to 2.5 people in attendance on site at one time
- Parking Ground Coverage: 100-110 spaces per acre used for parking only
- Above 300 [worship center] capacity: 12 – 24 sq ft per person

⁵ <http://www.lifeway.com/churcharchitecture/downloads/rules.pdf>

- Large churches with [educational facility]: 45 to 55 square feet per person

The only item that would be useful but isn't pulled from LifeWay's recommendations is that of the fellowship hall. LifeWay assumes the intended users would be those who attend an educational facility whereas the analysis will look into having it be used by the attendees of the chapel.

4.5.3. New Building Costs

RSMeans is known throughout the construction industry as a comprehensive source for construction cost estimates. Their website provides a breakdown of the cost of building a church in the Worcester area based on three different configurations and each one with either union labor or open shop. The original church was built with an open shop and there aren't any obligations for them to use union labor this time (since it is slightly more expensive) so the assumption will be open shop again. The cost per square foot provided is that of 2008's listing. Despite the year over year average construction cost growth in the Boston area of 3.5%⁶, churches actually grow at a much faster rate of 5.6%.⁷

The breakdown of the configurations and the adjusted 2010 (1.115 times higher than 2008) costs per square foot are the following:⁸

- Church with stone with concrete block backup/wood arch - \$176.89

⁶ <http://www.reedconstructiondata.com/news/2008/03/increases-in-construction-costs-remain-low-in-rsmeans-latest-report/>

⁷ <http://www.reedconstructiondata.com/news/2008/11/church-movie-theater-and-department-store-construction-costs/>

⁸

<http://www.reedconstructiondata.com/rsmeans/models/church/massachusetts/worcester/>

- Church with stone with concrete block backup/steel truss - \$170.66
- Church with face brick with concrete block backup/wood arch - \$168.25
- Church with face brick with concrete block backup/steel truss - \$160.90
- Church with decorative concrete block/wood arch - \$156.40
- Church with decorative concrete block/steel truss - \$155.24

The church building's current setup is that of the decorative concrete block with a wooden arch.

4.6. Church Financials

Discussing the income of a church, or any person or organization, can be a touchy subject but a church can't be built without truly going into these figures. BBC is mainly supported by weekly donations. Although attendees have the option to donate to select ministries, the vast majority of them simply donate to the general fund.

BBC provided the income data from 2007 to late 2009 and broken it down by weekly donations. Only the last three weeks of December's data is missing. The expenses data is available from 2004 until 2009 and is broken down by year. 2009's expense value is actually an estimate value for the entire year. For privacy reasons the church did not want to disclose the amount of cash it had on hand in the bank.

4.6.1. Income

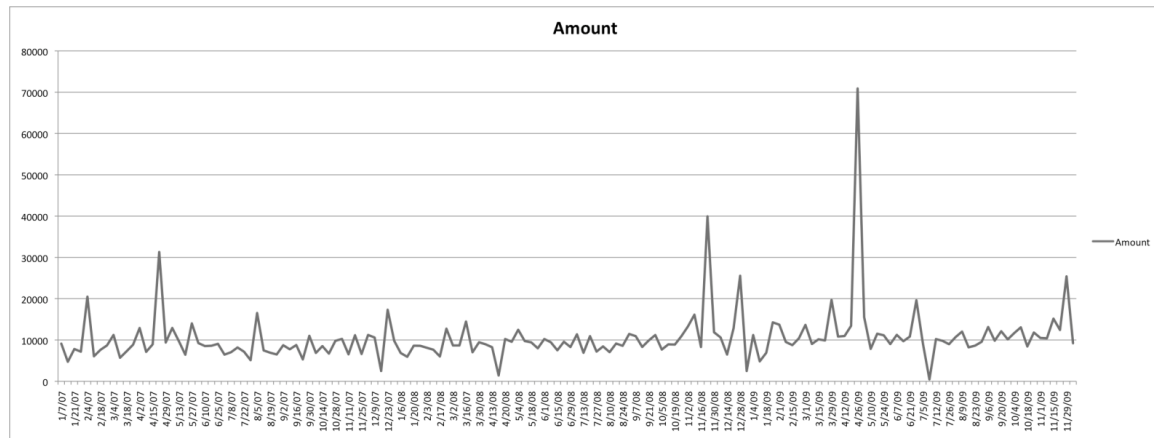


Figure 3 Income of BBC from January 2007 through December 2009

The above figure (Figure 3) shows the income of Bethlehem Bible Church from 2007 through 2009.

As expected, income did rise with the growth of the church. Unexpectedly, income didn't fall in 2009 despite an economic crisis. For an unknown reason, the total income for 7/10/09 hasn't been recorded. Also 11/23/08 and 2/26/09 are unique in that they had overwhelmingly large one-time donations. While one can argue that such data skews the overall picture, large one-time donations are not uncommon within a church. They, however, can't be relied upon with any level of consistency.

Due to the lack of data for the last three weeks of December, the average value of 2009's income is substituted in. When comparing the average of the last three weeks of December in 2007 and 2008 to that of all the other weeks of that year, the value for the last three weeks was higher in both cases. So, using the average value of the year produces a more conservative estimate.

With the estimated assumed values in mind, the end of the year income for BBC for 2007, 2008 and 2009 is \$483,570, \$541,082 and \$652,397, respectively.

From those numbers alone one could see exponential growth but the 2009 number is skewed by a one time \$50,000 donation. Even so, there is no doubt that a rate of income increase is there.

4.6.2. Expenses

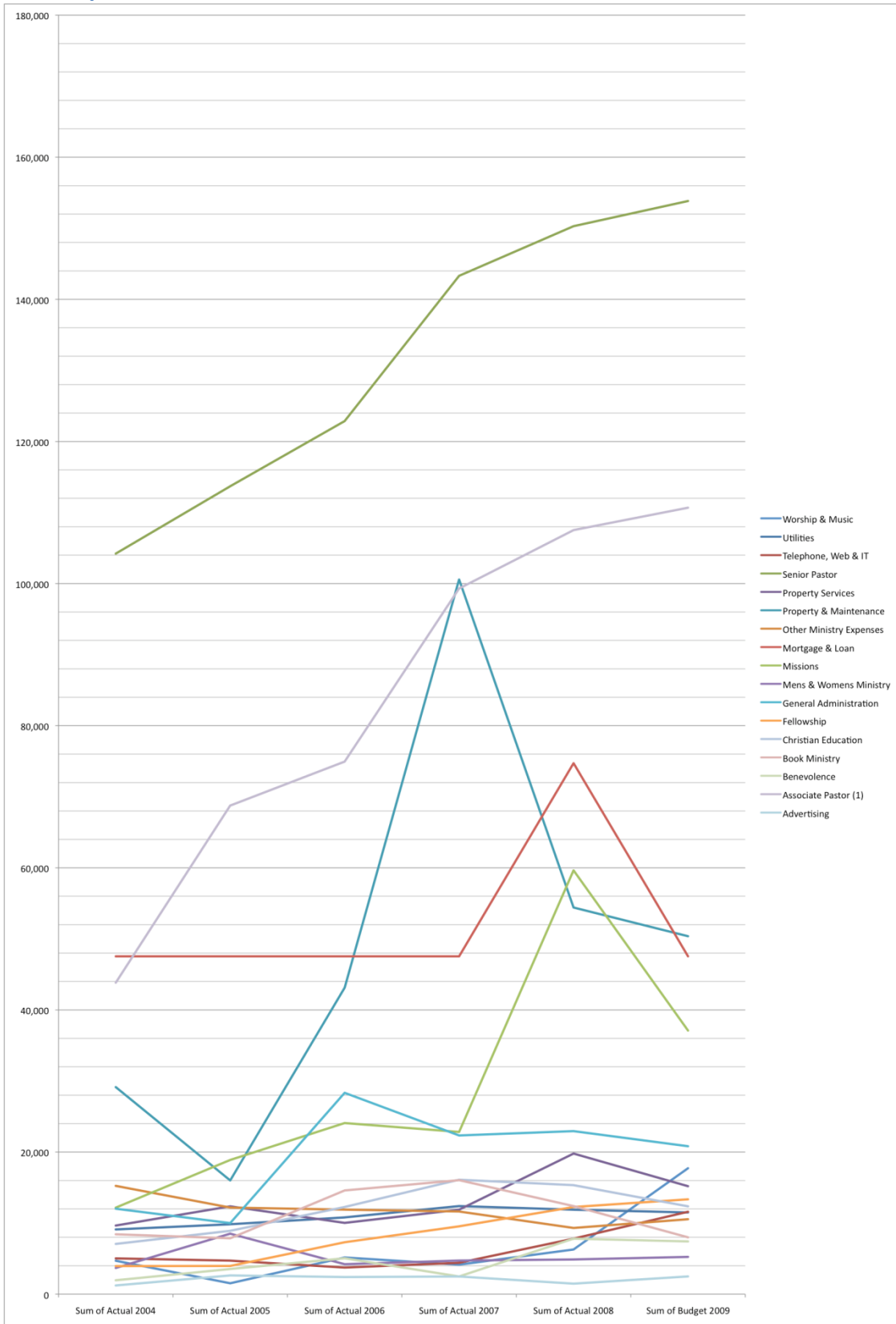


Figure 4 BBC expenses by group from 2004 through 2009

BBC splits expenses by category as shown in Figure 4. As seen on the expenses on top of the list, as it is the case in many churches, is the senior pastor. The associate pastor and two property-based expenses follow. According to Barbara Marzinsky, the person in charge of handling expense reports at BBC, the missions offering of 2008 was a one time large offering and likely won't be repeated. That would put the missions expenses right in the range of the non-pastoral and non-property expenses.

4.6.3. Comparisons

Since there is income only from 2007 and onward to report, there's only 3 years of comparison's to make. 2007 and 2008 were both years where there was a net loss. When questioned, the losses were a result of several one-time purchases including research expenditures to expand the existing property and a grand piano for the chapel. The budget surplus of 2009 makes up for the loss of the previous two years and then some.

Furthermore, in the years prior to 2007, three different sections of land off of the original property were individually sold off as residential plots. This provided with a substantial amount of cash to the church (again, the church did not want to publically disclose these values). The rational at the time was to use that cash to make the needed one-time purchases for the church. Thus, while it was a net loss for the year, the church did not consider it as such because some of these purchases added to the wealth/value of the church.

4.6.4. Future

Upon discussions with Pastor Dave, 2009's income and expenses will be used as the baseline for future years. This is comforting news as there is over a \$100,000 surplus in that year. Even taking away the one-time \$50,000 donation, the church still has an 11% surplus, putting it into a very good fiscal position for the foreseeable future. ()

4.7. Other Church's Case Studies

Bethlehem Bible Church's experiences aren't unique. Growing churches are constantly placed in a position to figure out how to accommodate the growth. There are plenty examples of churches whom chose to do multiple services, expand their existing building or build a new church entirely. Currently in Shrewsbury, Liberty Church does multiple services and has built an expansion to its original building to accommodate its growth. The project took about one year to complete, not including any of the planning stages.

Personal experience helps in understanding of the subject matter. Charts and graphs don't give a vivid picture on social issues that arise with any such proposals. In my 12 years at the Full Gospel Church in Westfield, MA I've experienced growth, splits, multiple services, expanding an existing building and the building of an entirely brand new building.

4.8. Outlook

One of the possibilities being looked into by deacons for the long term is the possibility of opening up a Christian school. Such a school would draw in more members to the regular services as it does for Holden Chapel. There hasn't been any

planning of it, though, but it's something on the minds of deacons should the possibility be there.

5. Study and Analysis

5.1. Background

What is critical about the chapel seating capacity number is that if it ever hits capacity, all the other ministries will likely stop growing. Many of these ministries are those that happen during Sunday morning and are secondary services that provide benefits to those who are attending. If the main chapel reaches it's full capacity and a ministry, such as childcare, still has room to grow, it is unlikely this ministry will continue to do so.

However, from interviews given as well as discussions with deacons, the church doesn't necessarily have to reach maximum capacity to stop growing. From what's been said, 80% seems to be the capacity at which point the church stops growing. That's not to say it applies to every case. Some very popular but space limited churches fill up to the point where a good portion of the crowd is standing-only almost every Sunday in places that the law allows. Times Square Church in New York City is one such example.

5.2. Growth Study

5.2.1. History

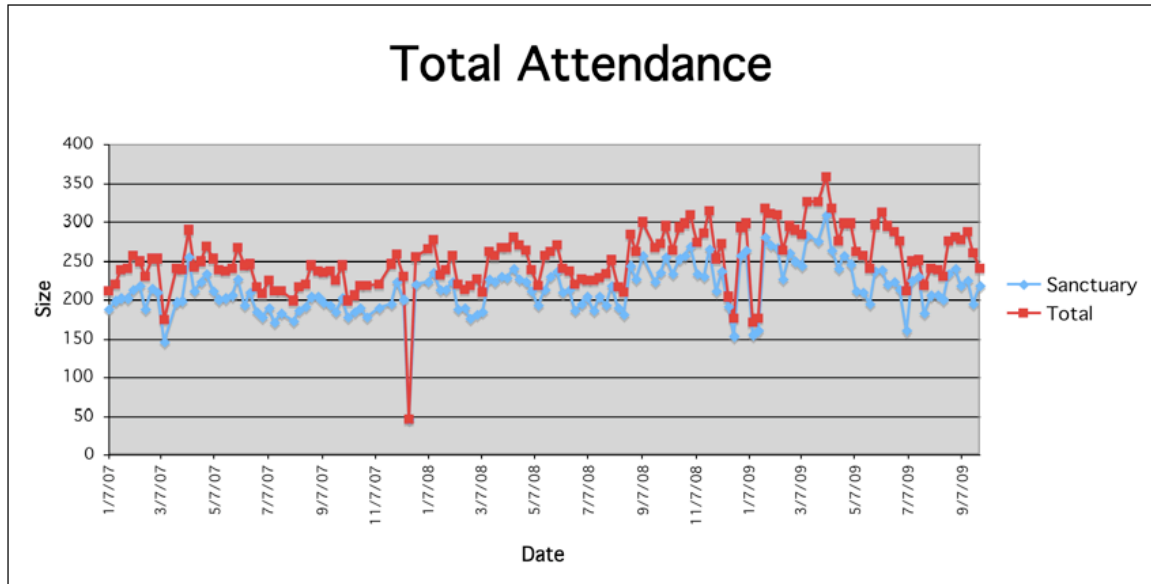


Figure 5 BBC attendance from 2007 through 2009

The statistics available are those from January 2007 up until September 7, 2009, covering almost 3 years of growth. The attendance graph (Figure 5) doesn't exactly give an easily decipherable linear growth. However, a real study of the graph shows not only growth but attendance trends that can be useful elsewhere.

The first order of business is to eliminate anomalies. There were a total of five days during the three years where a count hasn't been taken and thus not included in the final data. An easy one to spot is snow days. These happened once in the 2007-2008 winter. However, the 2008-2009 year experienced an unexpected number of snow days. The joke back then was, "If it's Sunday, it's snowing." While one can argue that snow days come with the season, they're not really predictable and end up skewing the data to be lower than if it wasn't a snow day. So while these were included in the final data sets, one ought to keep in mind these were indeed outliers.

There are also the expected event days. While these shouldn't be used to measure growth, depending on the day they could either bring in visitors or bring in fewer than expected. One example of the latter is July 5, 2009. Being the 4th of July weekend, it was expected many would be away traveling and staying with family. The concern with the event days that draw in larger crowds is that if the church is regularly running at close to capacity, these types of days will put quite a bit of strain logistically.

The two biggest church services for Americans are Christmas and Easter. BBC doesn't actually have a Christmas service; such services are often popular among Catholics. BBC does do an Easter service (as it always falls on a Sunday). While in 2007 Easter stood out higher than the previous two weeks, interestingly enough it didn't in the next two years. Overall, with a few exceptions, holidays haven't made huge impacts on attendance.

The record breaker happened to be April 5th, which coincided with a conference speaker. Makeshift seating arrangements were made to accommodate the crowd. If the church continues to expand at its current pace, it is highly probably that standing-only arrangements would have to be made.

5.2.2. Trends

Attendance trends follow a somewhat predictable pattern. It's higher during the spring and fall and lower during the summer and winter. Part of the statistical correlation is from the school year for K-12 school and college students. About 5-10 students in WPI's own Christian Bible Fellowship (CBF) group visits the church

every weekend, which isn't huge, but at 5% of the whole it's significant when the church is at 80% or greater capacity.

During the summer attendance is noticeably down. Part of it is the expected summer vacations people are taking. However, the head pastor, Pastor Mike, also takes a month long vacation. With him goes his entire family of 5. Again, like the CBF group, it isn't significant by itself and that a substitute pastor is available during this time but the sheer fact that he's the main pastor and he's gone provides those who've been following his sermons continuously to have an open window for other ventures.

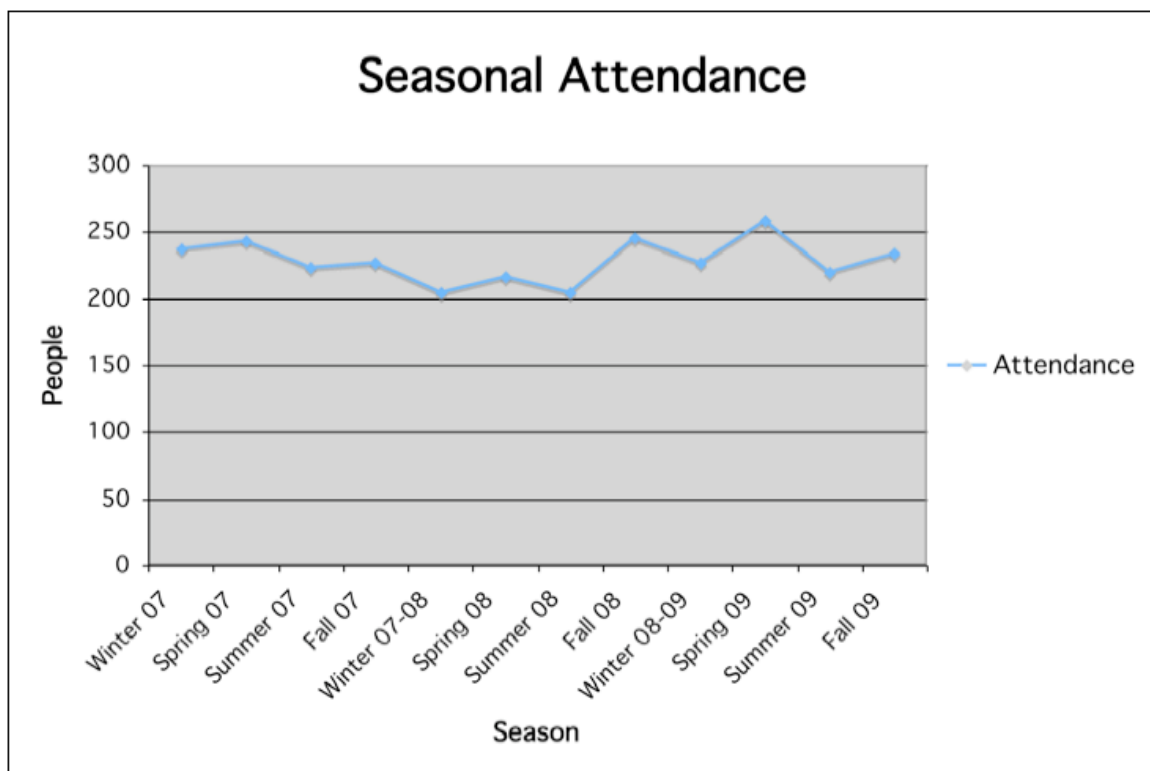


Figure 6 BBC Seasonal attendance averages from 2007 through 2009

The growth and decline based on seasons is shown by the seasonal attendance graph (Figure 6). The seasons themselves are organized by months. Winter is from December through February. Spring is from March through May.

Summer is from June through the second to last week of August. Fall is from the last week of August through November. The reason for the August exception is that the first week of school happens to fall on that week for both K-12 and college students.

Curiously, the seasonal attendance graph also shows a gradual decline from the winter of 2007 to the summer of 2008. Looking at the full attendance graph shows this isn't exactly the case. For example, when comparing the spring of 2007 to that of 2008, the rough average of the 2007 spring's attendance rate has already been reached at the end of the winter. For the 2008 spring, attendance didn't reach average levels for a couple of weeks.

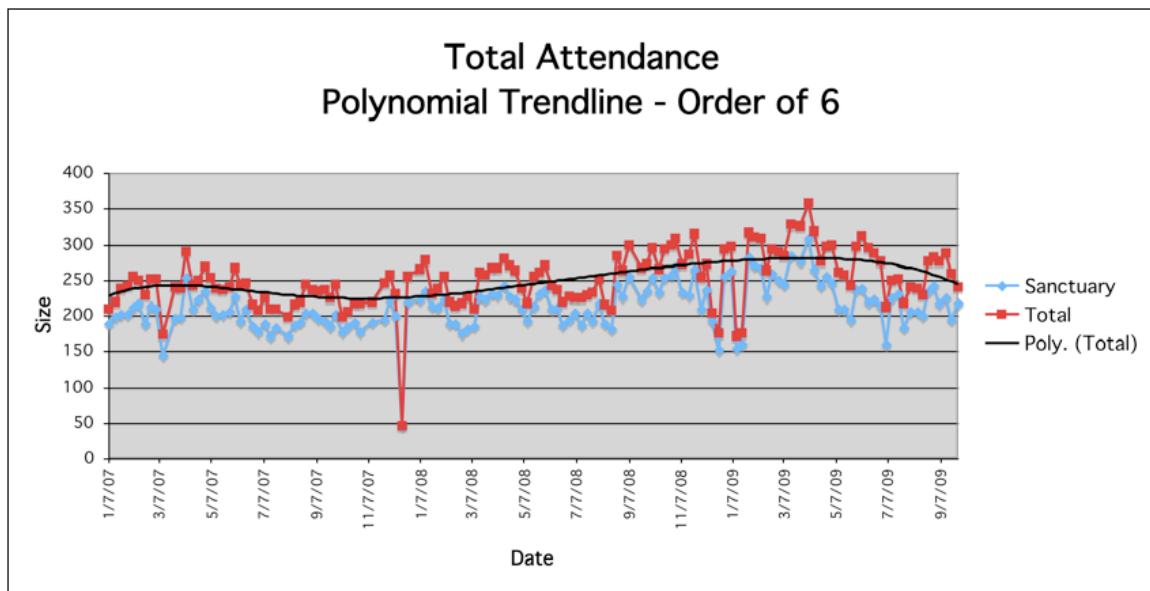


Figure 7 BBC attendance with polynomial trend line

To get a very clear overall picture of growth, a polynomial trend line on the order of 6 was inserted into the graph (Figure 7). It gives probably one of the best views of the growth of the church. It shows an overall wash in 2007, growth throughout 2008 and steady high numbers in the beginning of 2009 and a gradual decline starting around the summer. The downward trend is somewhat expected as

there is quite a bit of summer data and not enough fall data to offset it (last day listed is 9/27/09). From the trend line graph, it appears the biggest gain is just over a 50 people from October 2007 to April 2007.

I don't believe that town growth impacts the growth of the church significantly. The majority of the current members actually live outside of West Boylston. Some drive from as far away as Waltham every Sunday.

One last bit that needs to be covered: guest speakers. During the last weekend before Easter (4/5/09), attendance was unsustainable due to the Steve Lawson conference held at BBC. It wouldn't come as a surprise if another such guest speaker causes complete seating chaos, filling up every seat and causing the ushers to scramble to find seating accommodations for everyone.

5.2.3. Conclusion

So, the important question: is there definitive church growth. Yes. There's no doubt that there has been growth through all of 2008 and some of 2009. Does the downward trend line at the end of Figure 7 indicate a decline? It probably won't. With some degree of confidence it can be said that if there was a bigger sample of data for the fall of 2009 the trend line will likely be flat. As mentioned before, it's been noted by several deacons from experience that at around 80%, church growth hits a wall, one that BBC is currently facing. This wall is possibly due to people just not being comfortable with an overly packed service.

In terms of raw numbers, it largely depends if the church is anticipating linear or polynomial growth. Linear growth is a sloped straight line that assumes a constant steady growth. Polynomial growth assumes a growth with the rate of

growth constantly increasing. In the case of BBC, the better answer would be polynomial. All throughout 2008 there was non-linear growth. The trend could have possibly continued were it not for the physical limitations of the building. By the end of 2015 under linear growth the church would average 400 visitors. By 2008's growth alone, this is definitely a conservative estimate. Under polynomial growth the church would hit 600 average visitors by 5 years time.

Besides all the local factors that go into estimating growth like competition (other churches), location and population, it's really difficult to make an estimate of 5 years or more on only 3 years of data. An estimate of the church's population in 2025 (when a 15 year mortgage would be paid off) would almost certainly be inaccurate. *Given the current growth and the factors surrounding it, having a solution that accommodates up to 1000 people for the next 10 years would be ideal.*

In summary, church growth will still continue should the elders actively pursue options to accommodate growth. While the rate is somewhat tricky to figure out, a repeat of 2008's growth is not unlikely. Should there be a guest speaker in the future, it would be recommended that the church uses a different venue as experience from the previous one shows how packed such events can get.

5.3. Existing Property

5.3.1. Current status

There are a few internal and external options to expand the existing church building. Within the church itself, there is the chapel and several classrooms and offices. There isn't a shortage of classrooms for children's Sunday school; there are a few unused during morning service. There haven't been any complaints on the lack

of office space. The library and bookstore, though, are small and located on the second floor making it somewhat inconvenient to access. Even so, there hasn't been a significant demand to have them expanded. In other words, if the church seriously wanted to expand some of its secondary functions such as its library or any other one of its ministries the church building actually still has the capacity for it to be done.

The chapel, when first designed, was intended to be multi-use. It's used Sundays for the morning and evening services. Children use it during Thursday evening meetings. On occasion it's used to host gatherings involving food. The last item is assisted by the presence of a kitchen adjacent to the chapel. During events such as baptism, often when food is served and events involving children all the seats have to be stacked and put away and replaced afterwards.

As one can imagine, this creates many inconveniences and additional work. First, there's the trouble of having to constantly put away and put back chairs. This causes quite a bit of wear on the chairs themselves. Many of them have bent legs. These chairs serve the role of tables for whenever food is served. Food or beverages staining them is not uncommon after which they then have to be sat on. Not only do the chairs get dirty but also so does the floor. While cleaning and maintaining the chapel is expected, a vacuum isn't any good at removing grape juice stains. So, what seemed like a novel idea when first designed ended up being far more work.

Another hopeful suggestion would have been to expand the balcony. The problem that one would run into is that there is a slanted roofline. Where the balcony area is now (previously an unused choir area) there is enough vertical

clearance to expand forward. There isn't any room to expand to the left or right, though. If it were to extend forward, pillars would have to be set. In the process, seats on the floor would be lost to pick up some on the balcony. Such a gain would be very marginal for the costs. Furthermore, it would complicate baptisms by adding in a low ceiling (as compared to the rest of the chapel) and no one on the balcony would be able to see a baptism.

5.3.2. Building Size

Because of the fact that the building is situated so close to wetlands, a few unique regulations apply to it. Any proposal to build near wetlands will require approval of West Boylston's Conservation Commission as they have authority of any property within 100 feet of wetlands. Also, under Massachusetts' Wetlands Protection Act no property can be built 25 feet from the edge of "riverfront area" of which is contained in the property owned by the church. Even if the church were legally able to build closer to the wetlands line, it probably wouldn't be recommended as the space in the east and north of the church building is used for water channels. These channels either divert water directly into the wetlands via the hay bales wall or into the retention basin. Another potential problem of being close to the line is an increase likelihood of having to deal with groundwater.

On the south side of the building expanding isn't much of a possibility either. While it may be possible to expand it up to 11 feet forward under the legal setback of 25 feet minimum from the street there is still problem of sediment control and handicap parking space. Lancaster Rd is built upon an embankment directly south of the church building. A few feet north of it is the handicapped parking lot. North of

the parking is the walkway and the entrance to the building. If the church were to be expanded southward, elderly parking would have to be relocated. That would be the easy part.

Because of the embankment, issues of handling water runoff become more difficult. According to West Boylston laws, a “Certified Professional in Erosion and Sediment Control or Registered Engineer”⁹ would be responsible for submitting a proposal to the town’s Planning Board. Due to the embankment and the slope of the land unique, and possibly expensive, solutions would have to be devised for the town to approve expanding it south. As for now, the assumption would be that expanding southward wouldn’t be possible.

5.3.3. Conclusion

Would expanding the building northward or westward be possible? When expanding northward, due to the 25 feet minimum distance from wetlands and 50 feet from the mean parallel to the power lines, the only feasible shape that can be made is an isosceles triangle. On the western side the entrance is blocked but again the power lines get in the way. As a result, only a triangle-shaped expansion is possible and a new entranceway will have to be built. From an initial topographical look of the landscape, it doesn’t appear that a westward expansion would create significant drainage issues.

The reason no measurements or further planning was done was because expanding northward or westward won’t result in more room for the chapel. The

9
http://www.westboylston.com/Pages/WBoylstonMA_Planning/regfiles/section6.pdf

chapel resides in the southeastern corner of the building. Unless some serious internal restructuring is done, such expansion is fruitless.

5.4. New Building, Same Land

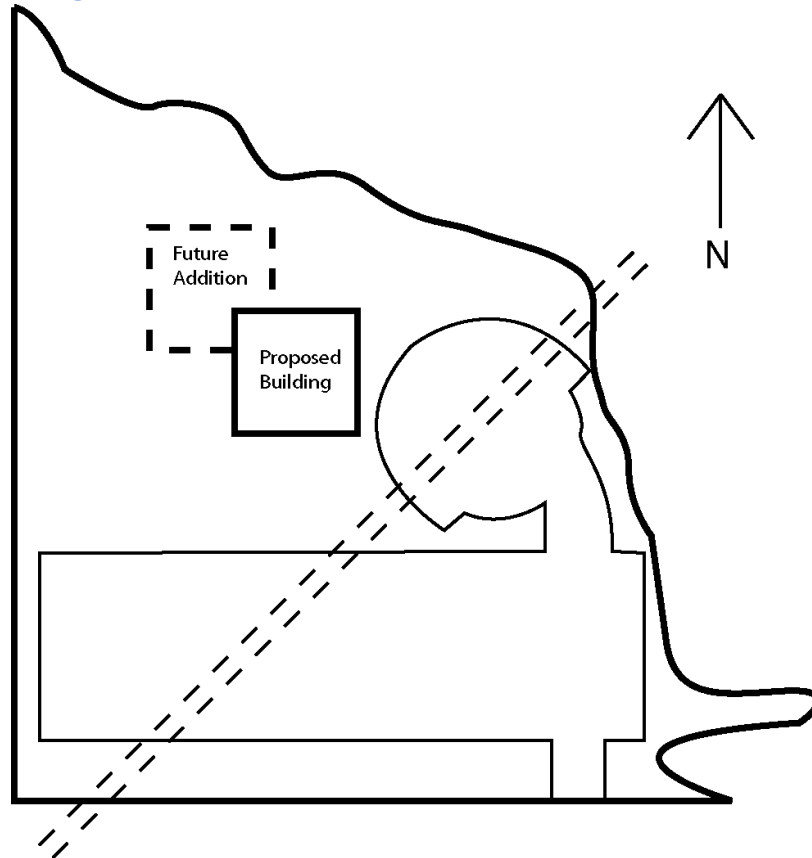


Figure 8 Sketch of BBC blueprint proposal with a different building location

When looking at some of the original proposals, there existed one in particular that had the building in the northwestern corner of the property. While originally 100 ft by 100 ft in size, it was positioned in such a way that allowed it to expand another 100 ft. In fact, the blueprint proposal actually outlined the area where the building could be built and had the words 'Future Addition'! (Figure 8) When Scott Goddard was asked if he thought that there was bad planning when the original building was built, he believed there was.

5.4.1 Location

Ideally, anywhere along the western edge of the property would be ideal. The southwestern corner would be an exception due to the power lines. The best reason for this placement is due to the slope of the property and the location of the retention basin. The water runoff would work similarly to how the current building does and the basin wouldn't have to be moved.

5.4.2. Septic System

The possibility to build a new building still exists. To do so would require upgrading the septic system by razing the original one and replacing it with a larger one. According to research from the original expansion committee, this step could become problematic.

The church property currently resides in a residential zone. This being the case, the septic systems in the area are suited for at most large families and don't consume a large percentage of the property. If a new building were built that was double the size of the original one, a new leeching field that expanded in proportion to it would be roughly 1/10th of an acre. Part of the reason for its unusually larger size is due to the quality of the soil.

What further complicates the process of upgrading the septic system is that the property resides right next to a large wetlands area. In most cases, it is recommended that septic systems be built furthest away from any watersheds. In the case of the current property, any design would require not only the approval of not only the town's Conservation Committee but also their Board of Health.

5.4.3. Parking

Because of the unorganized nature of the parking lot a solid figure on the number of available parking's spots currently used is hard to obtain. On its record days, some visitors have resorted to parking on an adjacent street and walked. If a good rough estimate was made as to the most amount of cars the parking lot could accommodate, 160 would be close to accurate.

In the original proposal blueprints, the proposal for the current design contained a paved parking lot for 70 spaces with the northern part of the property completely unused. The proposal with the building in the northwestern corner contained a parking lot design made to accommodate up to 153 spaces. This latter proposal uses almost the entire property.

5.4.4. Future Expansion

If a new building was built that was double the size of the original one and had room for twice as many people, it may not be suitable for the current rate of growth of the church. Hypothetically speaking, if the church grew at half the rate of 2008's growth, roughly 15% per year, it would take only 5 years to go from 350 to 700 people. Add in the fact that it can take a year to build a new building and it could potentially be filled to capacity in no time. The idea of creating a separate branch of church has not been looked upon as a reasonable by the elders.

5.4.5. Costs

While it may appear that there is a slight advantage with this proposal on the costs front in that new property wouldn't have to be purchased, it's not entirely the case. Until the mortgage on the original building is paid off at the end of 2010, it can't be torn down; the bank simply won't allow it. And unless the church comes up

with a great parking solution, the existing building is taking up potential parking space.

From an investment standpoint the reality is that building a new church and tearing down the old one is an overall loss of wealth. The value of the new building will be close to that of the money put in to build it. The real loss would be the original building. After spending years of paying it off only to tear it down would be an immediate loss of hundreds of thousands of dollars. Granted, the value of the property as a whole could grow as a result of having a newer, bigger building but the difference wouldn't come anywhere close to makeup for the loss in the original building.

5.4.6. Conclusion

If the church were limited to its current property then designing and building a new church wouldn't make much sense at all. There are a few upsides to doing so, such as not having to need to purchase new land, not making any member's commute longer or more difficult and not having to reestablish ministries in the local area but the disadvantages would outweigh these benefits.

First, there is the issue of the septic system. Assuming the church gets over the hurdles of getting approvals to upgrading the existing system by the town, the system will almost certainly occupy a larger area.

Furthermore, if the church were built to accommodate 700 people, at 2.1 people per car it would require roughly 330 parking spaces. The proposal blueprint that had the church building built in the northwest corner of the property had almost the entire land being used and still only managed to have 170 spots. Even if

the current building was to be torn down, that's only helping the church get closer to the 170 spots figure, not 330. If a plan was devised that allowed for parking across the street and that would accommodate about 250 cars then this would be an entirely different story. The existing building could be turned around and used as an administration building or school. Unfortunately that isn't likely to happen soon as it was discovered that most of that land is landlocked, too.

In conclusion, using the existing land isn't a very sound decision both logistically and financially. It really comes down to an issue of space and that the current space isn't really designed for much more growth.

5.5. Multiple Services

5.5.1. Staffing

One thing brought up by the interviews with the deacons is the need to have the head pastor preach at both Sunday morning services. An interview request went out but without a response. What has to be determined is the willingness of Pastor Mike Abendroth, the current head pastor, of his committing to preach at multiple services. From comments made over the past year on the subject, I suspect there is a willing sentiment. It is unknown if the pastor is willing to take this route a raise would be recommended. A real, full interview is warranted, though, so in the meantime this question is still up in the air.

The other real staffing concern is teachers. According to Scott Walkden, as it is he feels that resources are stretched thin. There are a few plausible solutions with the three-service schedule Pastor Pardeep proposed:

1. Have the teachers stay for both regular services – This would likely be the least desirable option. Going this route would require a five-hour commitment from the teachers every Sunday. Many of the current teachers are parents also and beyond the unwillingness to stay five hours, many will simply object to due to family commitments.
2. Teach classes during the adult Sunday school class – While it would make teachers miss this class, it isn't much different than skipping the regular Sunday morning service they would miss anyway. While it sounds like an ideal solution, there isn't a very high attendance for this class nor are the pastors expecting much of a boost with a multiple services scenario. If that were the case, many children would end up being deprived of specialized teaching for them. Worse, it would actually make the problem of crowding even more awful as children who'd normally be in classrooms now end up taking up seats in the main chapel.
3. Have two sets of teachers per service – As difficult as this option is, it likely is the only realistic one that tackles the overcrowding problem without compromising on education. As it currently stands, there are separate classes per grade with one grade being split into two classes due to size. If, hypothetically speaking, the classes were evenly split in attendance between the two morning services, it would mean twice as many teachers with half as many students per class. This would be an unrealistic situation. One possibility is to merge grades to form larger classes. However, twice as many teachers overall would still be needed. And this is still assuming the

hypothetical 50/50 split. If the attendance were split differently, there is the risk of merging too many grades into one class making the education somewhat suffer.

4. Have classes only during one service – This option would work best for teacher staffing but that’s about it. Parents would be discouraged to go to the service without a class. Children who go to that service will lose out on their education. It would put parents into a position of being forced to go to a particular service, possibly splitting them away from their family or friends. Even more so, there is the possibility of immediate overcrowding of the service with the classes and defeating the purpose of split services. This solution would end up creating far more problems than it would solve.

5.5.2. Actual Attendance

In all the experiences of visiting churches with multiple services, I’ve never been to one where the second service has a higher attendance than the first. There is no evidence to suggest that BBC would be any different. The current location doesn’t present any unique challenges. The demographics of those who regularly attend are relatively mixed with people in just about all age groups. The church doesn’t actually keep track of statistic so it’s hard to gauge any figures other than pure estimates. There aren’t any economical challenges such as transportation that would skew attendance. In short, there isn’t any evidence to suggest that the second service’s attendance will be higher than the first.

According to David Botcher, Holden Chapel’s attendance was 65%/35% between the first and second services. The only exception to this was during the

winter where the second service received a significant bump at the expense of the first service. This is very similar to my own experience at the Full Gospel Church in Westfield.

Moreover, it could cause unforeseen social divisions. Some will choose to go to one service as a matter of convenience. Others will do so to be among a group of people. The point is that it can't be planned. There's no doubt that the first weeks and possibly months of a switch to multiple services will be somewhat chaotic as people figure out which they and their friends and acquaintances go to.

5.5.3 Timeframe

A small note on the subject of multiple services is that the elders of the church, if they were to do multiple services, would only want it as a temporary solution. The interviews have said that making it permanent is out of the question. The maximum amount of time they're willing to tolerate having such a structure is a year.

5.5.4. Conclusion

I feel that the real concern of multiple services is staffing. No so much the ushers and pastoral staff but the teachers. What would compound the problem are the off-peak seasons of summer and winter where some of the staff members will likely be on vacation. Of the four proposals suggested for staffing teachers, the best one is really a matter of what the priorities of the church are. Then there is the fact that any multiple service solution would only be temporary.

If the church were to stick to its self-made requirement of one year maximum for a multiple services solution then in the end logistically it's quite plausible.

Getting qualified teachers would be one of the more difficult requirements to meet. There's no doubt that there will have to be a compromise on either the education of the child or the commitments of the teachers. Either there will have to be more teachers to maintain the grade levels and classroom sizes or grades will have to be combined to accommodate the number of available teachers.

Still, creating a plan for dealing with multiple services is fruitless if the intention is to implement it temporarily and not be working on a more permanent solution in the mean time. A solution that's intended to deal with the growth of the church has to already be in the works. Not having one could show a level of incompetence on the part of the elders of the church.

5.6. New Building

5.6.1. Selling Existing Property

There honestly isn't an easy solution as to what to do with the existing property. As already mentioned, no other church has come forth with an interest to purchase the chapel. Then again, BBC hasn't made the public aware of its intention to sell. It's something the church ought to try but by no means invest a lot of money into. Going this route would erase zoning concerns as well as, shy of possibly the parking lot, any need to modify the existing property to make it suitable for the new church.

Rezoning it would require finding a new tenant willing to occupy the building. West Boylston simply won't let a vacant commercial/light industrial zone sit in the middle of high-valued home. And that's if they're willing to allow the switchover at all. The best course of action here would be to get in touch with West

Boylston's Economic Task Force. It's a committee formed in 2007 that actively seeks to convert existing zones to a commercial/industrial type. Its purpose is to find new revenue for the city by encouraging economic growth. The fact that the existing property has poor soil conditions for new development and has power lines going through it could possibly help in making the case for a zone switch.

Despite those difficulties, converting it over to a residential property would be an even worse idea. Doing so requires the complete removal of the building. To do that, the entire building's mortgage needs to be paid off as well as the penalties of \$8,000 that come with it. Then the church would have to contend with the power lines and property value loss issue. In short, the church would have to spend about \$90,000 (remainder of the mortgage plus penalty) to spend money to *lose* wealth in the demolition of a building. The costs are far higher than any perceived benefits.

5.6.2. New Property Size

The required size of a new property is dependent on three major items: The capacity of the chapel, if a fellowship hall is to be built and if a school is to be built. The fellowship hall is a likely candidate, given the frustrations of BBC's current setup but the school is a long-term goal. An obvious assumption is all the acreage required would be developable.

Given LifeWay's numbers, a church able to accommodate up to 1000 people should have between 8 to 10 acres. As it stands now the current church building uses 24 sq ft per person (92'x92' with 350 people) and if that trend would continue

the size of the new building should be about 24,000 sq ft. This would include offices, classrooms as well as the chapel.¹⁰

The fellowship hall, including the kitchen, is recommended to be half the size of the sanctuary, the same ratio used for the Full Gospel Church's fellowship hall. This would increase the total building size to 36,000 sq ft. With walkways and decorative landscaping around the church, this would put it at about 1 acre in size. At the lower end estimate of 12 sq ft per person the church would only be 18,000 sq ft.

Assuming an efficient layout of spaces, the total needed parking is computed in the following manner: $1000 \text{ people} * (1 \text{ space} / 2.1 \text{ people}) * (1 \text{ acre} / 100 \text{ spaces})$ giving us a rounded result of 4.8 acres. This figure does not include any potential driveways or handicap parking. Nor does it include any potential decorative landscaping that may be done around the parking lot.

Without a gymnasium or any outdoor facility roughly 7-10 acres would be consumed. To provide ample space for the future construction of a school and gymnasium, a total of 15 acres would be sufficient. Holden Chapel, for its part, purchased 20 acres of land. With a 1000 capacity church and a school, it still has about 5 acres for future development.

5.6.3. New building Costs

At the lowest end of the cost spectrum would be a building with decorative concrete blocks and a steel truss. At a size of 18,000 sq ft and a cost of \$155.24 per sq ft, the total estimated cost would be \$2,794,320. At 36,000 sq ft, it would be

¹⁰ <http://www.lifeway.com/article/?id=163856>

double that. A church with a stone exterior and a wooden truss, the more expensive roof, and a size of 36,000 sq ft would yield an upper end cost of \$6,368,040. Ideally, if the church wanted to save money and use the current building's configuration and still keep it at 24 sq ft per person, the realistic cost would be \$5,630,400. In general, the size of the building has a larger impact on the total cost rather than the material used to build it.

Unfortunately, I was unable to find any construction data on the costs to build a parking lot from RSMeans. A year ago it was a quarter of a million to pave about 1.8 acres. While it wouldn't be a surprise if the figure stayed close to that, the lack of hard data for estimates makes this topic a non-starter. Given that the current parking lot is made for 1.8 acres with a \$750k cost and the new one should be 4.8 acres, the non-year adjust cost would be about \$2 million.

From rough estimates of the real estate values in the area, a 15 acre plot will cost somewhere in the range of \$1 to \$1.5 million dollars. This is partially based on the costs of current large plots of land in the area and a purchase of a 15-acre plot by Wal-Mart in West Boylston two years ago. This specific plot was intended to be a distribution warehouse but plans for it fell through when the economic bubble burst. Due to the rarity of plots of land of this size in the Worcester area, a good estimate cannot be made. Furthermore, the prices would most certainly be affected by how developable the land is.

Sticking with the upper end value of the possible land cost and combining it with the cost of erecting a new 36,000 sq ft building similar to the BBC's current configuration and paving a parking lot, an upper end estimate for this project would

be \$9.4 million. If the church managed to get a plot of land for \$1 million, went with a more modest 24,000 sq ft building and only paved half the lot (the rest would be paved as needed), it would bring the cost down to \$7.6 million. The former option, in effect, would be about 24% more expensive.

5.7. Purchasing an Existing Building

Trying to purchase an existing building would be similar of a problem as trying to sell the existing church, as will be described later. In general, the odds that the church is facing are finding a building that's in a good locale, meets the space needs, is in good shape and is affordable. What are the odds of that happening? A quick search on LoopNet, a commercial real estate site, listed 25 chapels for all of Massachusetts. Only 3 of them are reasonably close to West Boylston. Only one has decent space requirements. Still, the advantage of purchasing an existing building is cost. When looking at cost per square foot it is far cheaper to purchase an existing building than to erect a brand new one.

5.8. Affordability

LifeWay recommends a maximum building debt of 2 to 3 times the previous year's income. At about \$650,000, the maximum recommended outstanding debt is about \$2 million. For the modest size building, \$3.6 million has to be put down. Even if the church were to take out an equity loan of \$1 million against the current property until it sold, that would still leave \$2.6 million to be put down.

The current yearly mortgage expense is \$47,544. If the church were fortunate enough to obtain a loan at 4.5% interest (still possible in the current market) and a 15-year term for \$2 million, the resulting yearly cost would be

\$183,600. That's a difference of \$136,056. As 2009's surplus is \$116,580, such a loan would put the church in the red for possibly several years. Worse, should growth diminish, either by slowing down or members leaving, this would put the church in a very bad fiscal position.

If the church were to be willing to pay up to about \$105,834 per year, which is the current mortgage plus half the surplus, the biggest mortgage it's able to get at 4.5% is \$1,152,900. Still, all the estimates given are with a 4.5% interest and a 15-year term. Going with a 30 year rate could help ease the burden further. Still, constructing a church building for 1000 people is by no means easily affordable by BBC short of having a significant amount of cash on hand.

6. Summary

Despite being in the red in 2002 and 2008, Bethlehem Bible Church is in great fiscal health at the moment. It has the ability to pursue several different options in handling church growth both temporary and permanent. From personal discussions with the members, many of them have a strong willingness to commit to the church's many ministries. Something really hard to measure but is quite noticeable is the strong unity among the attendees. There is also quite a bit of trust that the elders are capable of making the best solution for the church concerning how to handle expansion.

6.1. Recommendation

Having multiple services can be a tough decision for a church to make. It is certainly an undesirable option but one that would be pursued if necessary. The strain of having a smaller staff during the summer and winter months makes the

logistics of this option more difficult to figure out. The recommended option for BBC is to have seasonal multiple services. There will only be a single Sunday morning services during the summer and winter months.

One concern is that the attendance count could grow during the spring or fall such that when the church transitions back to a single service there could be even greater overcrowding despite the lower attendance during the off-peak seasons. If this were the case, having multiple services in the off-season would be necessary. To determine if it is needed, one has to look at the seasonal attendance averages. There is about a difference of 25 to 50 people between the two seasons. At the church's current attendance average, if they were to pick up an additional 50 new attendees during the peak months with split services, it's an indicator that not only is the church still growing but also split services have to continue through the off-peak months.

One point not noted about multiple services that would be advantageous to the church is that if growth were to continue there would be a better income stream to expedite the any purchasing decisions on church expansion. However, planning to have multiple services strictly towards this purpose would go counter to the philosophy of the church concerning money. Estimating such growth would be unwise simply because it's unpredictable. In a worse case scenario, the church might actually shrink from such a move and the anticipated income never materializes.

Personally, while I believe there will be strain on the staff with a multiple service scenario, I do believe there is a strong sense of unity within the church. To better prepare for multiple services, the staff needs to be individually asked what

service they will likely attend. This way, leaders of each ministry are better able to determine what their staffing needs would be.

In the mean time, an evaluation needs to be done on what the church can afford to do. With 2009 as a baseline budget, the church is able to afford a slightly higher mortgage. Around \$2,000,000 is where the church ought to draw the line. As the church grows, it would be able to extend its line of credit.

Timing isn't exactly working on the side of BBC. The low interest rates are available today and possibly won't be tomorrow. The church's current mortgage debt is set to retire in a year and a half, a bit longer than what the church would want to have multiple services around for. Plus, by a year and a half's end if the church experience the growth that it did in 2008, the multiple services will start crowding.

Purchasing an existing church would likely go counter to the long-term goals of the church. Very few churches have the resources to handle an elementary education. A well established church also shouldn't be in a position to be constantly moving around finding bigger replacement churches. This will likely abandon some people as their commute becomes too difficult should the church move too far away for them.

From looking at the very original blueprints, some of the designers had in mind the possible need for expansion. As it stands now, a large, 1000-member church building may not be affordable. However, the building could be built in stages. As soon as the church reaches a certain number of attendees, additions will

be added on to handle further the growth. The downside to this is that it will cost more overall.

The stages would start with the most important item: the chapel. It can be built to accommodate approximately 600 people. It would be built in such a way that enabled a future expansion would utilized the existing chapel and simply add to its size. An easy way to expand seating without expanding the footprint of the building, thereby reducing construction costs, would be to build a balcony. This is the same approach Holden Chapel has taken.

Classrooms aren't as difficult as they can be located throughout the facility where it's most convenient to build. The kitchen would be built right away even though its primary use would be to serve the fellowship hall. Ideally, it would be built in such a way that it can be immediately and easily taken advantage of by the fellowship hall once it's built.

7. Conclusion and Follow-up work

For privacy reasons, a full financial study was unable to be done. I feel confident, though, that the deacons are fully aware the church's financial situation. This alone would be at the heart of any future study and would be limited to within the church.

Another important step, should the church decide on purchasing new land to build a new building, is a detailed study on the needs of such a building. This would be a true exercise in functional programming and one better geared towards civil engineers. There are several members within the church that have a civil engineering background and their resources could be pooled to save the church the expense of hiring expensive architects. It can also be a future IQP project.

The short-term answer on what happens next is that a meeting is made between the elders and I on the work that I have done. More than likely, the work I did here would be a stepping stone into more specific research, work that I would volunteer to do on my own. The work could range from doing more complete interviews with church members to actively searching real estate properties to purchase.

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