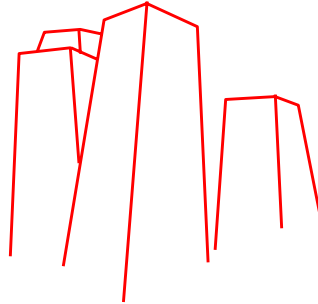


Temple Micah: ***Demography, Dynamics*** ***& The Future***



Jeff Passel
Prepared for
Planning Committee
May 6, 2002 (Revised)

Analysis of Historical Patterns of Membership Growth for Temple Micah

Prepared by Jeff Passel for the
Long-Range Planning Committee
Part 1 of 2

- A. Membership Change:** 1988-89 through 2001-02 including additions and departures for families with and without children further subdivided by more detailed family types.
- B. Membership Projections:** Through 2011-12 using alternative scenarios based on the analysis of historical patterns from part A.



Two-Part Study of Micah

- **Dynamics of Membership Change**
 - Covers 14 Fiscal Years
 - 1988-89 through 2001-02
 - 649 Membership Units:
Year Joined & Children's Ages
- **Projections through 2011-12**
 - 6 Family Types
 - Transitions from '94-'02 Averages
 - 9 Different Projections
Hi-Med-Lo Growth
Hi-Med-Lo % Families w/ Kids

This study includes three different, but related exercises: (1) an analysis of the dynamics of membership change over the period 1988-2002; (2) a projection exercise to examine alternative growth scenarios over the next 10 years; and (3) an analysis of dues pledges covering 1994-95 through 2001-02.

The dynamic analysis covers the last 14 of Temple Micah's fiscal years (which run from July 1 through June 30): 1988-89 through the current year 2001-02. During this time, there were a total of 649 "units" who were members at any time. Note that these are not necessarily unique; for example, if two individual members marry, they are treated as two units before marriage and one after. Every unit was classified by duration of membership. For most units, the date joined was determined from the annual records or data from the archives. For some, I had to consult a couple of very early membership surveys or guess (usually based on some early *Vine*'s). In cases where individuals joined separately before becoming a couple the earliest membership date was used.

The analysis also includes children by age for two reasons. First, the number of children of school age is important for assessing future demands on the Congregation. Second, the projection model deals with children in the context of their families. For virtually all current and recent members with children under high school age, the Temple's database included the birth dates or ages of the children. For older children, some guesswork and assumptions were required to fill in missing ages. These older "children" (some of whom are in their 30s now) are less critical for modeling demands for religious school. However, knowing that families had children in school at some point in the past does affect the projection assumptions.

Projection assumptions and family types are discussed below.



Main Historical Results

- **Dynamics Changed in New Building**
 - Little Growth '88-'95
 - 70% Growth Since
- **More Families w/ Kids & Singles**
- **Loss Rates Vary by Type of Family**
 - Highest for:
 - New Members
 - Singles
 - Families w/ Young Kids

The major findings of the historical analysis appear on the next few charts. The data clearly show a significant break in Congregational dynamics with the move to Wisconsin Avenue. Between 1988-89 and 1994-95, the total number of units in the Congregation grew from 210 to only 220 and fluctuated between roughly 200 and 220. Since July 1995, the membership increased steadily, reaching 380 units as of February 2002 – growth of 70% over the 6+ years since the move.

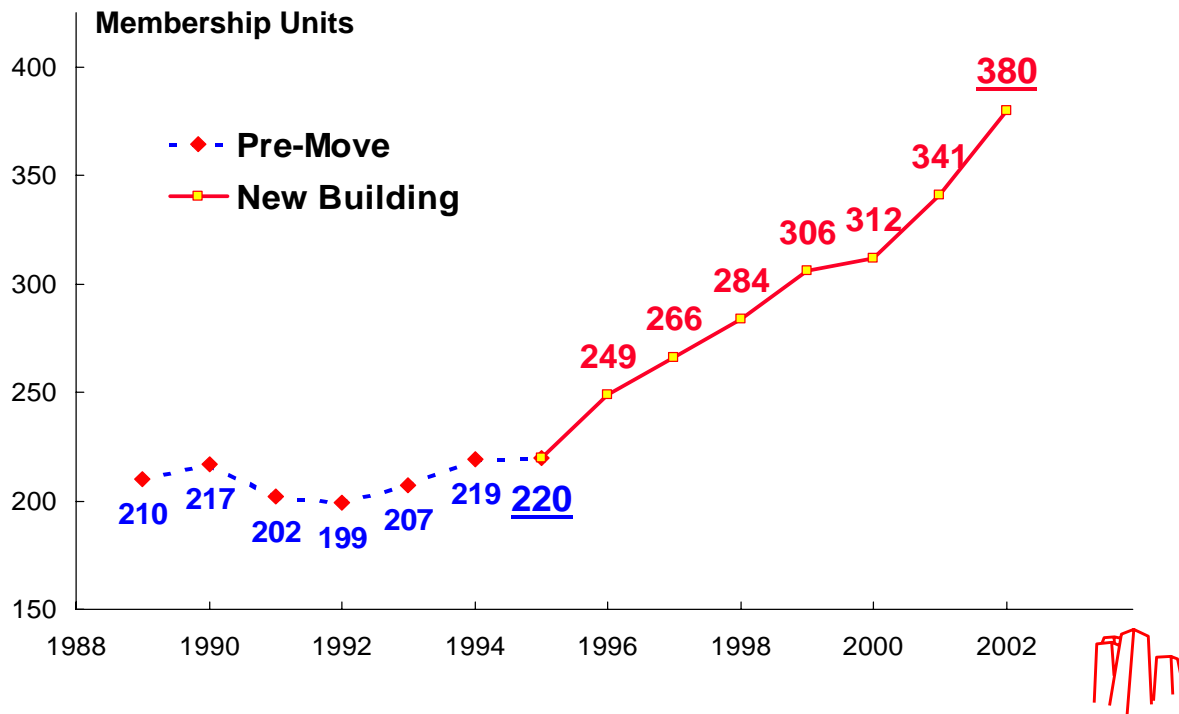
All segments of the Congregation have grown, but the most rapid growth, both numerically and in percentage terms, has occurred among families with school-age children and families with “grown” children (i.e., beyond high school). In addition, the number of singles has increased rapidly.

Retention rates (that is, the opposite of loss rates) are the lowest among families with pre-school children and singles. Further, members who have joined recently are the most likely to leave.

The analysis & projections use information on membership from the Temple Micah database as of February 2002 with an update through April.



Little Change While in S.W. -- Growth Rate Increased with Move

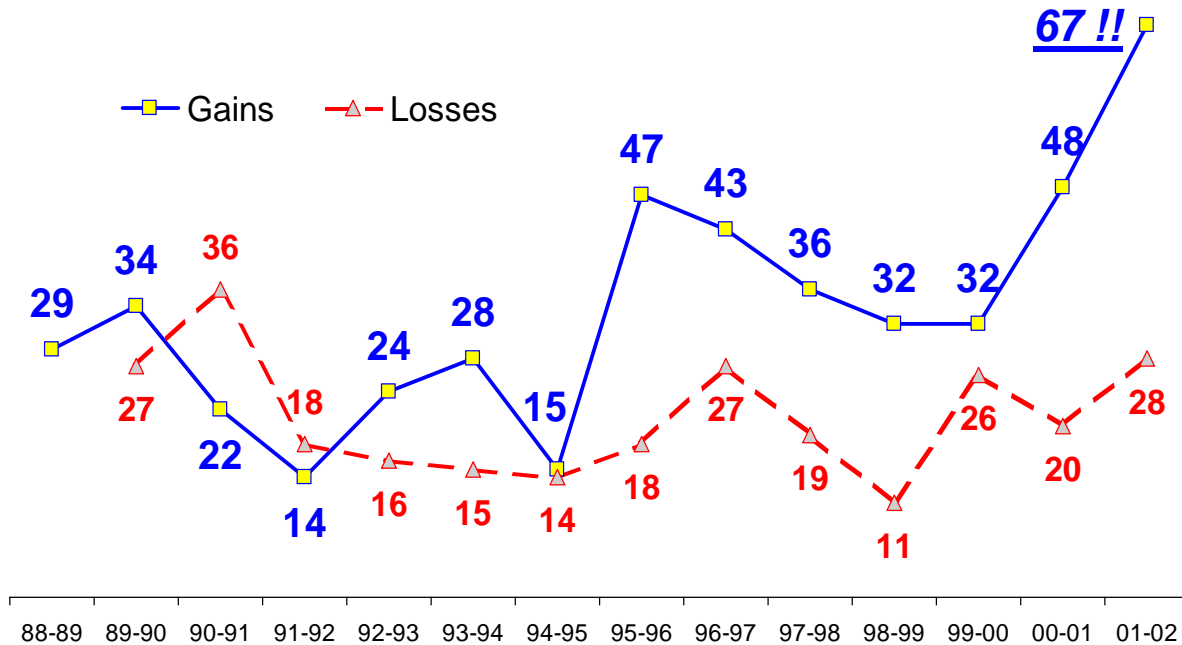


This chart depicts the growth of the Congregation since the 1988-89 fiscal year (through April 2002). It shows clearly the virtual lack of growth before the move to Wisconsin Avenue. Since September 1995, the Congregation grew steadily through the 2001-02 fiscal year, averaging net growth of just over 20 units per year. Net growth was gradually slowing through 1999-2000, but in the last two years, Micah began to grow more rapidly. The net change between 2000-01 and 2001-02 of 39 units (from 341 to 380) is the largest numeric increase during the entire period.



Growth Has Been Uneven -- Losses Relatively Stable

Annual Change in Membership Units



This chart breaks the annual change in membership into two components – the gross additions to the Congregation (new members or “gains”) and the “losses” or number of membership units who left the Congregation. This chart suggests that the increased growth occurring after the move to Wisconsin Avenue (in 1994-95) is largely the result of larger numbers of new members. The annual losses fall within a fairly narrow range from 1991-92 through 2001-02 (with peaks in 1996-97 and 2001-02). Some losses are inevitable as members move away and, unfortunately, die. However, the relatively slight increase in losses in the face of much larger numbers of new recruits and a growing membership suggest that we are doing a better job of retaining members. (More on this later.)

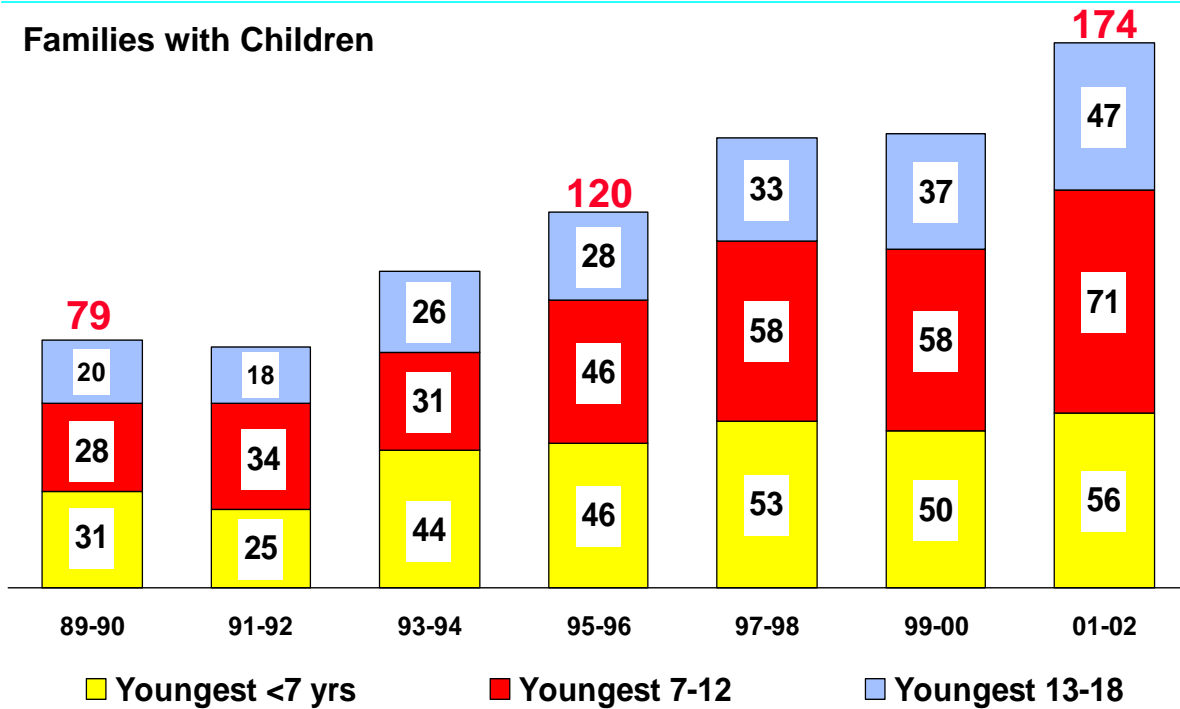
The number of new members joining since July 2001 is the highest we’ve seen. Continuation of additions at this level coupled with continued retention of the new members will lead to rapid growth in membership.

[My suspicion is that the relatively large losses in 1989-90 and 1990-91 resulted from aggressive recruiting combined with discounted 1st year membership rates. The higher numbers of recruits in those years could not be retained as members once the full dues structure kicked in.]



Rapid Growth Following Move in Families with Children

Families with Children



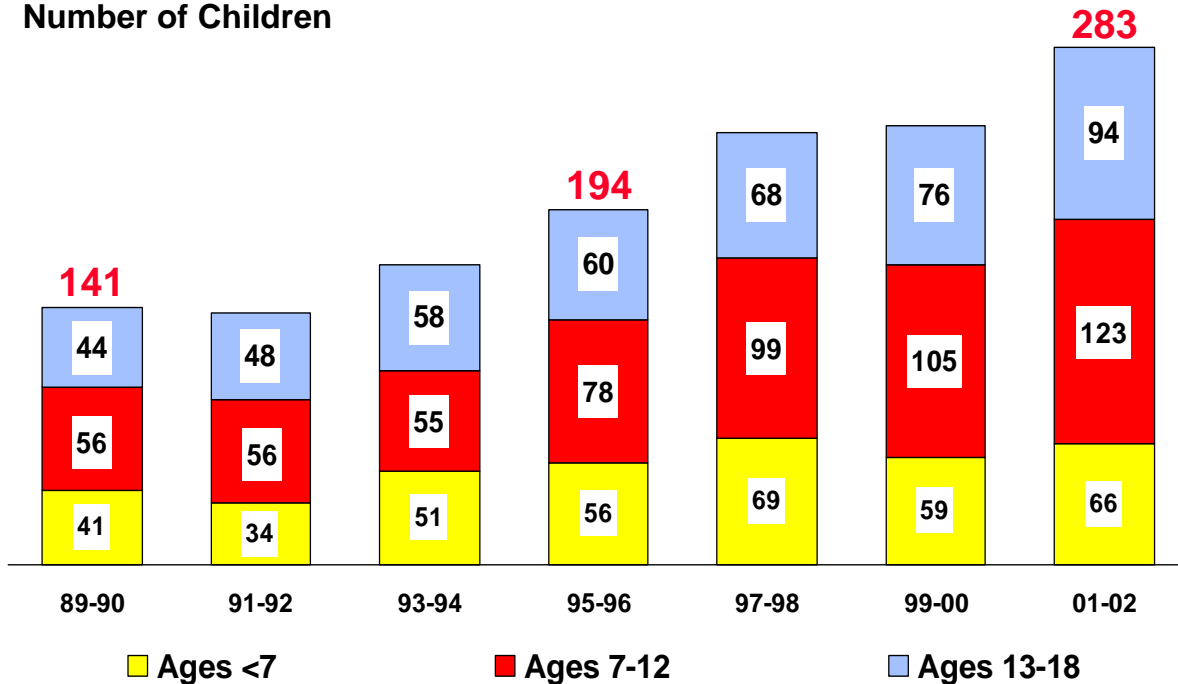
This chart shows the number of families with children, subdivided into groups on the basis of the youngest child (under 18). (Note that data are shown only for *every other year* to simplify the presentation.) Growth of families with the youngest children (i.e., those families with children under 7) is held down because these families eventually age into the next group.

Since the move, growth has been most rapid in the families that have the most kids in religious school – those where the youngest child is 7-12 years of age.



Rapid Growth Following Move in Number of Children

Number of Children

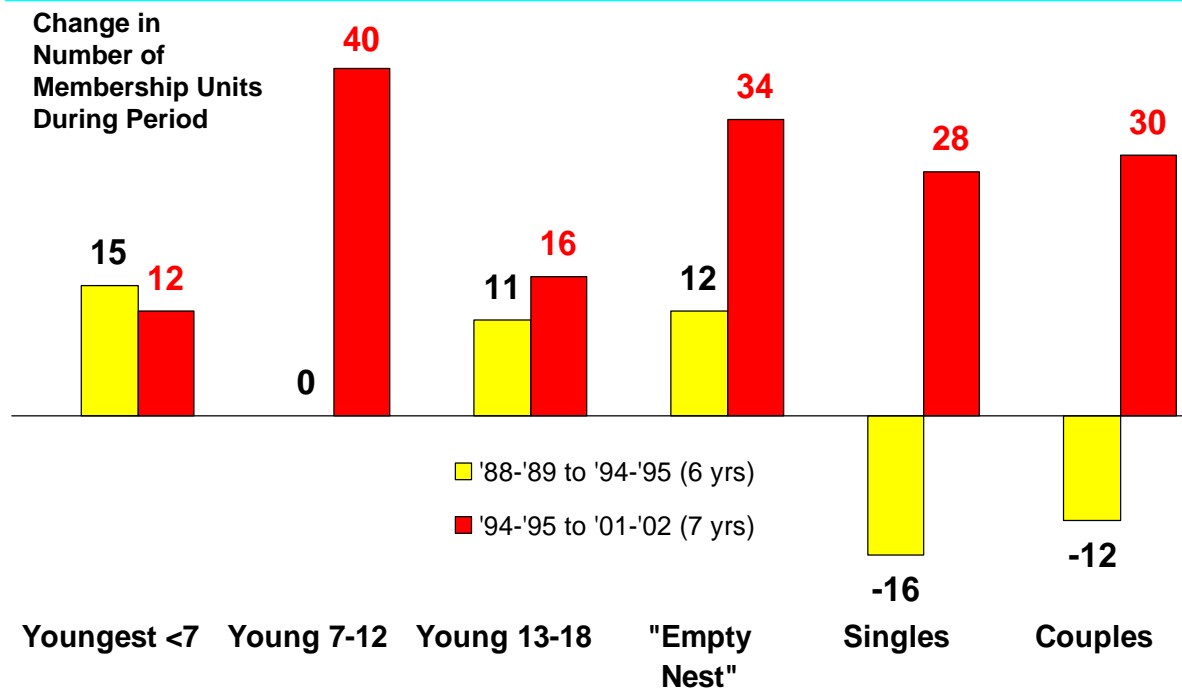


This chart shows the number of children in the Congregation subdivided by age group. (Again, note that data are shown only for *every other year* to simplify the presentation.) The number of children of religious-school age has grown most rapidly since before the move as the 7-12 year-olds increased from 55 in 1993-94 to 124 in 2001-02. Growth of the 7-12 population comes both from new members with children in this age and from members with young children who eventually “age into” the religious school. Indeed, it appears that much of the growth in the last 2 years has been from families who joined earlier with pre-school children who are now of school age.

[For comparison, religious school enrollment is currently about 190. This figure represents virtually all of the 7-12 year olds, one-quarter to one-fifth of the 0-6 year olds, and about half of the 13-18 year olds.]



Growth Especially Rapid in School & Empty Nesters



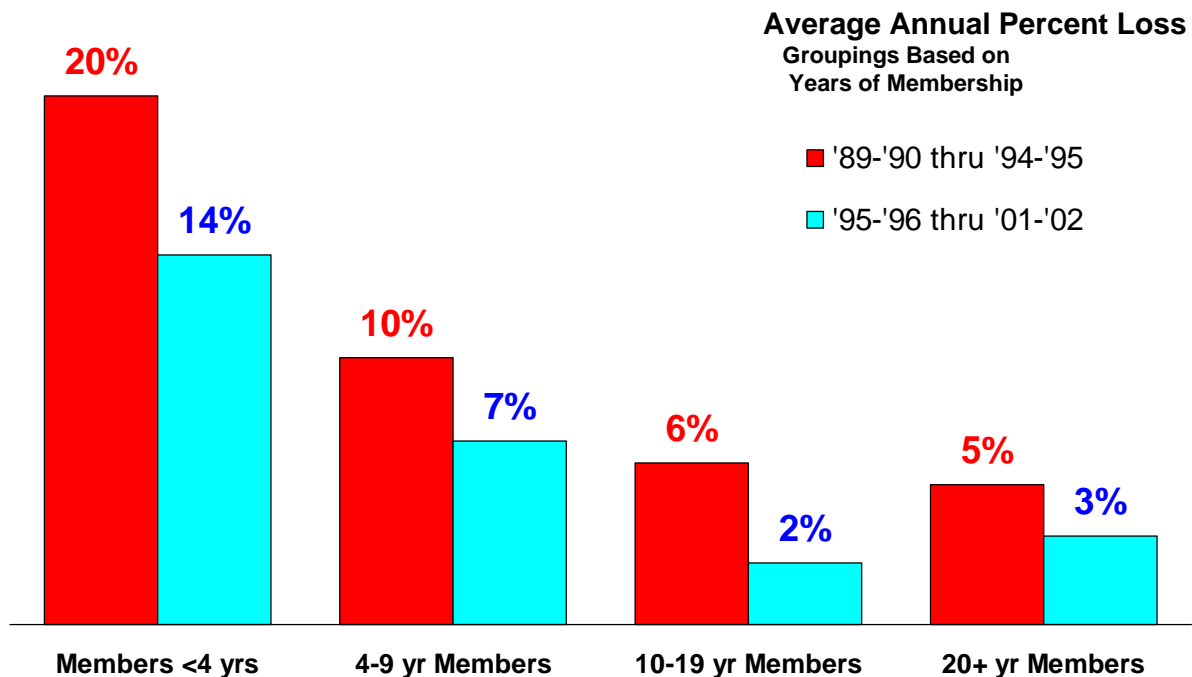
This chart represents the net change in the number of membership units subdivided by “type” for two periods: (1) the 6 years between 1988-89 and the move to Wisconsin Avenue, 1994-95 and (2) the almost 7 years since the move, 1994-95 to April 2002. The 6 family types used in this and further analyses and projections are:

- (a) Families in which the youngest child is less than 7. These (and other families with children) may be either one-parent or two-parent families, regardless of marital status.
- (b) Families in which the youngest child is 7-12 years old.
- (c) Families in which the youngest child is 13-18 years old. Note that the three family types with children refer only to children under 19.
- (d) “Empty Nesters” are families in which the youngest child has aged out of high school, i.e., the youngest child is at least 19 years old. Almost all of these families had one or more children eligible for the Temple Micah religious school at one time. Thus, this group is not meant to include new members in their 50s or 60s who have grown children who never were eligible for Temple Micah religious school.
- (e) Singles are individuals who join Temple Micah by themselves. They may be of any age, but do not have children of school age. (If they have such children, they are considered families of types a, b, or c.)
- (f) Couples are two adults without school-age children who join as a unit, regardless of gender.

This chart shows dramatically the changes that have occurred in the Temple. We have gained in all categories since the move. Before the move, we were losing units without children – a trend that turned after the move. Families with religious school-age children (7-12) have also increased rapidly since the move. In addition, the number of empty-nesters has grown as fast as any group. This increase is principally due to the fact that we have tended to retain as members those families whose children attended Micah, but have graduated from high school



Losses Highest in Early Tenure; Better Retention in Recent Years

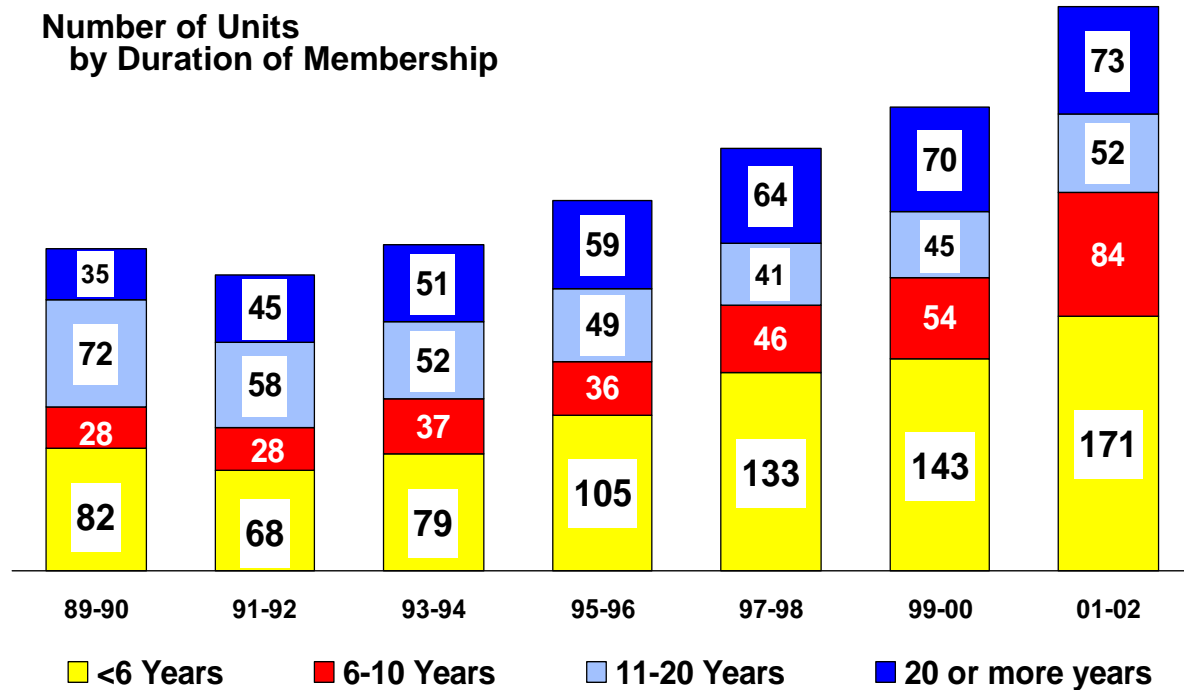


This chart switches perspective from “what the composition of the Congregation is” and “who is joining” to “who is leaving the Congregation.” The figures shown are average annual rates of loss expressed as a percentage of the initial population. Thus, the loss rate of 20% shown for members of less than 4 years duration means that if there were 100 families (units) at the beginning of a fiscal year who had been members for less than 4 years, 20 would leave the Congregation during the next year and 80 would be members at the beginning of the next year. (Note that some of them would move into the next tenure category of 4-9 years of membership and there would be some new members in the less than one year category.)

There are two very strong patterns in these results. First, the longer a family is a member, the less likely it is to leave the Congregation. Losses are highest among the newest members. Second, since the move to Wisconsin Avenue, we are doing a much better job of retaining members. Among relatively new members (up to 10 years in the Congregation), the loss rates after the move are roughly two-thirds of those before the move. For longer-term members (10 years or more) the loss rates have been cut in half – from 6 percent per year to 3 percent per year. This level probably represents close to the best we are likely to achieve. Among the long-term members, some die, some are transferred out of the area, and some retire and leave, but only a few appear to simply drop their membership *after* their children have graduated from high school. It is impossible to retain everyone.



Growth at Long Durations & Short Durations

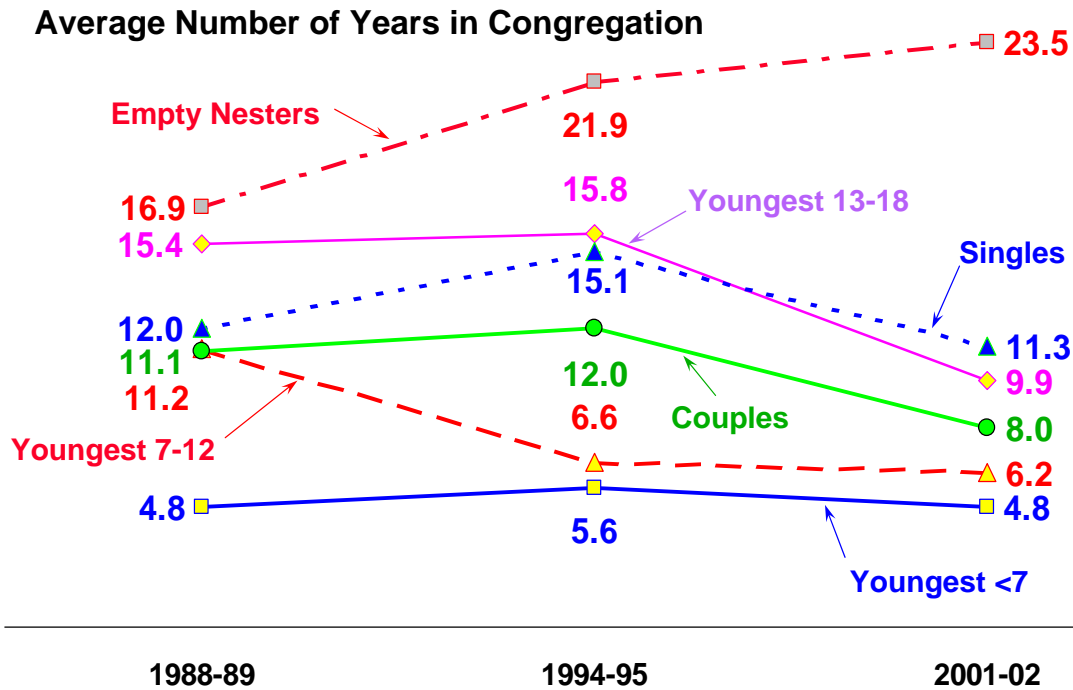


This chart traces the growth in membership according to how long families have been members. (Again, note that data are shown only for *every other* year to simplify the presentation.) The number of relatively new members has grown substantially, especially since the move to Wisconsin Avenue as the number of units who have been in the Congregation less than 6 years increased from 79 in 1993-94 to 171 currently. (This is part of the reason long-term members sometimes ask “Who are all these people?”) The large increase in 20+ year members since 1989-90 reflects the maturing of the Congregation and the growth that occurred in the 1970s.

The large increase in 2001-02 in the number of members in the 6-10 year category reflects the membership growth that occurred in the first two years after the move. ***Almost 60 percent of the Congregation (218 units out of 380) joined after we moved to Wisconsin Avenue.*** This percentage will continue to increase as the Congregation grows.



Shift in Membership Duration Following Move

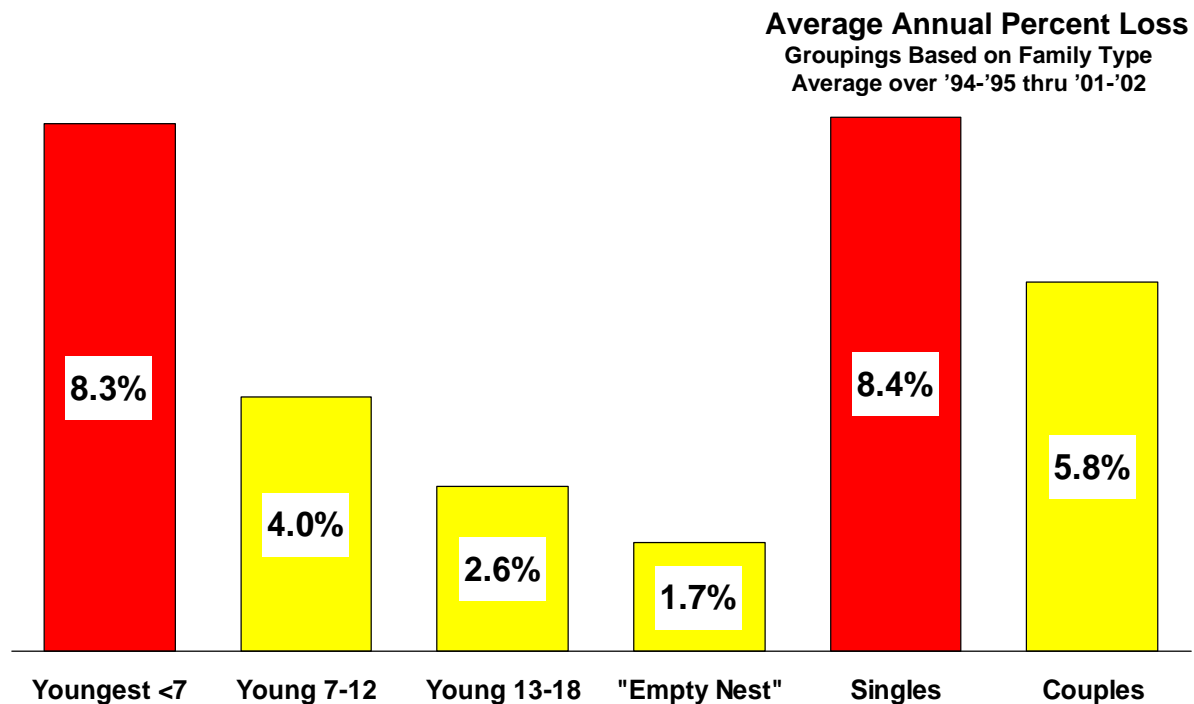


This chart shows changes in the average length of time units have been members, subdivided by type of family, at three points in time -- the beginning of the analysis, the move to Wisconsin Avenue, and the current year. The average tenure of the Empty Nest population has increased steadily as longer term members' children leave high school (and the families remain as members). When the Congregation remained in Southwest, both the single members and couples increased in average tenure (and both groups probably became older, too). With the move, many new singles & couples joined (both young and old) so that the average tenure dropped substantially.

The influx of families with children also shows up in the tenure data. Among the group with the youngest children (less than 7 years), there has been little change for structural reasons -- families tend to "age out." The decreased tenure among families with youngest child aged 7-12 reflects membership growth both from new families and the aging from the younger families. The situation of families with school-age children in 1988-89 probably reflects an stage in the life of the congregation that will probably not be seen again. Many of the new members during the preceding decades were childless couples or singles. They married, often as Congregants. They then had children as members of the Congregation and the children grew to religious school age. This dynamic plays a lesser role today in the dynamics of growth in Micah's child population.



Loss Rates Vary by Type of Family



The chart examines loss rates by type of unit rather than by duration of membership. The figures are average annual loss rates based on data since the move – i.e., they represent losses over the period from 1994-95 to 1995-96 through 2000-01 to 2001-02. During this time, 145 membership units left the Congregation. The growth from 220 to 380 units is the result of 305 new units joining during this time. (Note also that some, actually most, of the losses occurred among the new units – 87 to be precise.)

There is clearly an interaction between loss rates by family type and by duration of membership. For example, the loss rates are among the highest in the group where people have generally been members for the shortest amount of time – families with young children. Next come two groups where the average tenure has been dropping rapidly -- singles and couples. Empty nesters, on the other hand, seldom leave the Congregation.

Unfortunately, there is not enough data to compute loss rates by duration and family type (without somewhat more complicated multivariate analysis). Note that I have “annualized” the loss rates shown here by averaging over different intervals and durations. All of the computations use only transitions occurring after the move to Wisconsin Avenue.



Nine Alternative Projections

- ***Three Growth Levels***
 - 50 New Units/year (Average of last 3)
 - 75 Units/Year (2001-02 = 67)
 - 25 New Units/year
- ***Three Mixes of Families***
 - Current (Families w/ Kids = 44%)
 - Religious School “Heavy” (66%)
 - Religious School “Light” (~20%)
- ***Transition Rates Held Constant at Average of Last 8 Years***

To assess the potential impact on future membership trends, I produced a range of projection scenarios. These are demographic “projections”-- that is, they trace the consequences of a specific set of assumptions regarding gains and losses to the Congregation. They are not meant to be “predictions” in any sense.

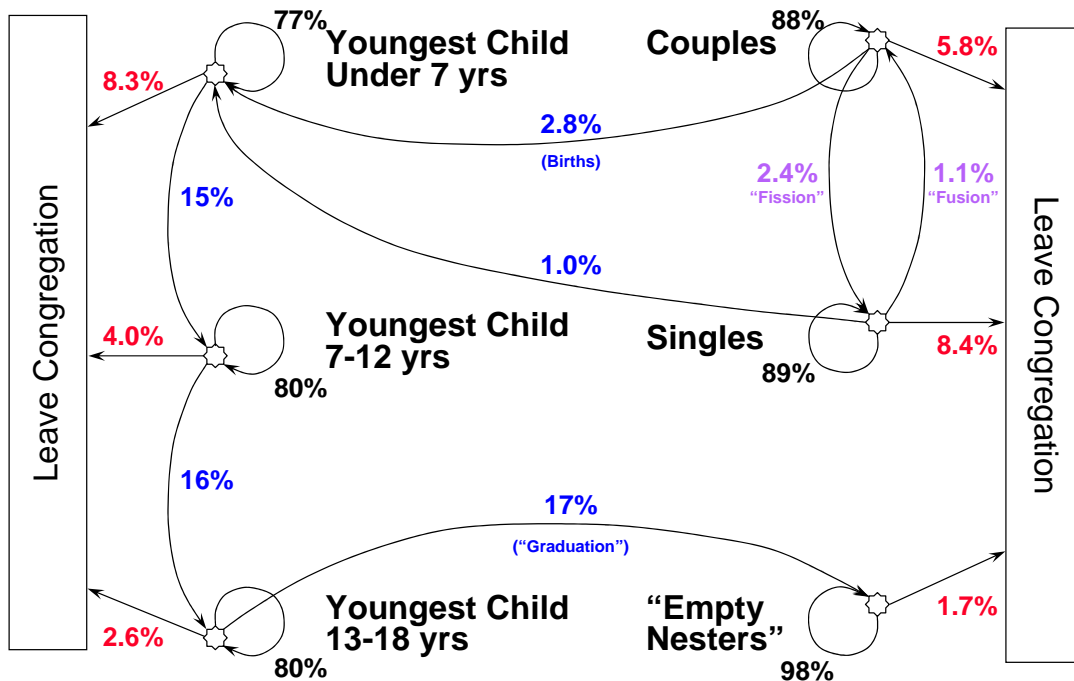
The alternative scenarios use three assumptions regarding the amount of growth -- measured by *gross* additions to the Congregation each year. The middle or baseline scenarios assume that 50 new units join the Congregation each year. This level represents roughly the average annual gross additions over the last three fiscal years. Net growth is determined for each scenario by the number of losses. High growth scenarios assume 50% more gross additions each year, or 75 units. Low growth scenarios assume 50% percent fewer additions or 25 per year.

Three different mixes of new members are assumed. The central, or baseline mix, assumes the current mix of new family members -- approximately 44% (or 22 out of 50 new units) are families with children and 54% are singles or couples (without children). The “religious school *heavy*” mix of new units includes approximately 50% more families with children or roughly two-thirds of the new units. The “religious school *light*” mix of new units has only about half the percentage of families with children, or about 20%. The proportions are adjusted slightly to total either 25, 50, or 75 new units per year.

All scenarios use the same transition probabilities from family type to family type and the same proportions leaving the Congregation for each family type. The probabilities are held constant for the projection horizon. But, the number of exits can vary based on the dynamics of Congregational composition.



1-Year Transition Probabilities – Assumed for All Projections



Based on data for 1994-2002.

This diagram displays the transition probabilities used for all projection scenarios and the types of transitions that are allowed. To illustrate with the figures for families where the youngest child is under 7 years of age: Each year 8.3% of these families are assumed to leave the Congregation. Another 15% of the families “age out” of the category and become families in which the youngest child is 7-12 years old. The remaining 77% of the families remain in the category where the youngest child is under 7. In addition, 2.8% of couples and 1.0% of singles move into the category, as do new members (not shown in diagram) whose youngest child is under 7.

Couples can become singles and vice versa, although the proportions are not very large. In addition, couples and singles who have births move into the category of having children under 7.

Families with older children generally do move into younger categories because of birth spacing considerations. For a family with the youngest child aged 7-12 to move “backward,” there has to be at least 7 years between births; to move from “youngest aged 13-18” to “youngest less than 7” requires a 13 year separation; and from “empty nester” to “youngest under 7,” at least 19 years between births!! Such things do happen, however. For the projections, I assume that 0.2% each of “youngest aged 7-12” and “youngest aged 13-18” families transition into the “youngest under 7” category.

Note the very high retention rate (98%) for empty nester families.



Distribution of New Members -- Baseline Alternative Assumptions

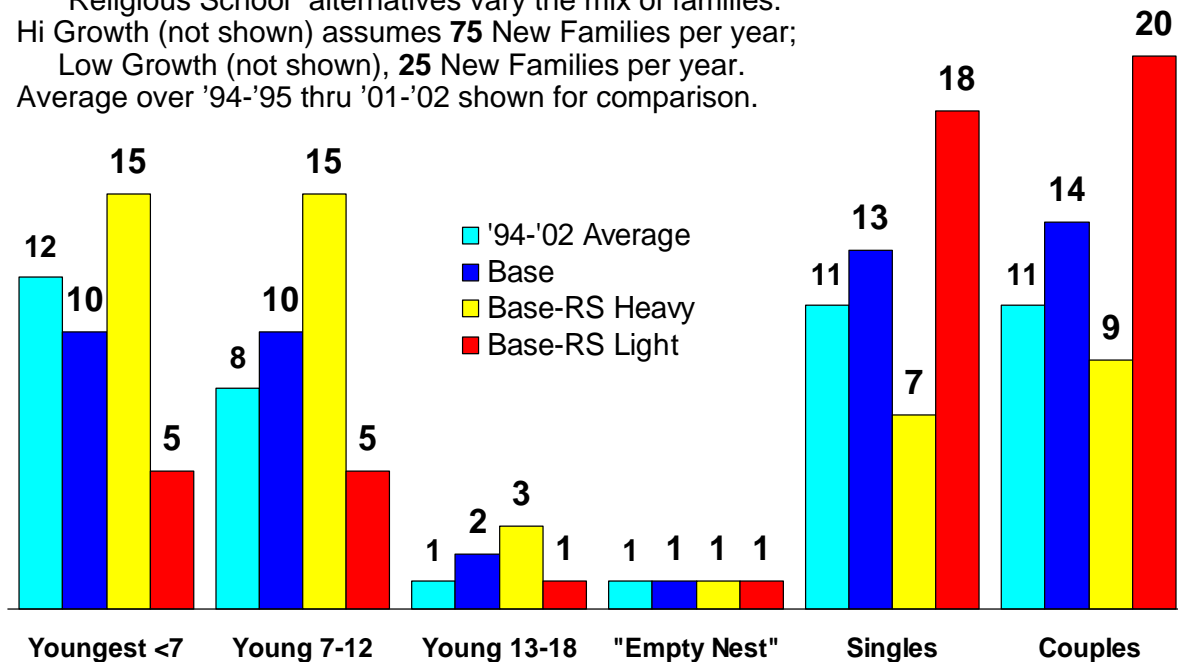
Base Projections assume **50 New Families per Year.**

"Religious School" alternatives vary the mix of families.

Hi Growth (not shown) assumes **75 New Families** per year;

Low Growth (not shown), **25 New Families** per year.

Average over '94-'95 thru '01-'02 shown for comparison.



This chart shows alternative distributions of annual new families assumed for the baseline projections (50 new families/year). For comparison, the cyan bars (on the left of each group) show the average of '95-'96 through '01-'02 additions -- amounting to 44 new units per year.

The baseline assumptions (50 new families) per year, shown in the chart, are:

| <u>Category</u> | <u><7</u> | <u>7-12</u> | <u>13-18</u> | <u>"Empty"</u> | <u>Single</u> | <u>Couple</u> | <u>Total</u> |
|-------------------------------------|--------------|-------------|--------------|----------------|---------------|---------------|--------------|
| Base | 10 | 10 | 2 | 1 | 13 | 14 | 50 |
| Base - RS Heavy | 15 | 15 | 3 | 1 | 7 | 9 | 50 |
| Base - RS Light | 5 | 5 | 1 | 1 | 18 | 20 | 50 |
| Average '94-'02 (since the move) | 12 | 8 | 1 | 1 | 11 | 11 | 44 |

The high growth assumptions (75 new families) per year, not shown in the chart, are:

| | | | | | | | |
|-----------------|----|----|---|---|----|----|----|
| High - Base | 15 | 15 | 3 | 2 | 19 | 21 | 75 |
| High - RS Heavy | 23 | 22 | 5 | 1 | 12 | 12 | 75 |
| High - RS Light | 7 | 7 | 1 | 2 | 28 | 30 | 75 |

The low growth assumptions (25 new families) per year, not shown in the chart, are:

| | | | | | | | |
|----------------|---|---|---|---|---|----|----|
| Low - Base | 5 | 5 | 1 | 0 | 7 | 7 | 25 |
| Low - RS Heavy | 7 | 8 | 1 | 1 | 3 | 5 | 25 |
| Low - RS Light | 2 | 3 | 0 | 1 | 9 | 10 | 25 |



Projection Results

- **Growth Under Most Scenarios**
 - Even 25 New Units per year is enough
 - Due to High Retention
 - Rapid Growth Very Possible
- **Nature of Congregation Depends on Mix of Families Recruited**
- **Retention of “Empty Nesters” is Critical**
 - Numbers Grow as Kids Age
 - Projections Assume High Retention



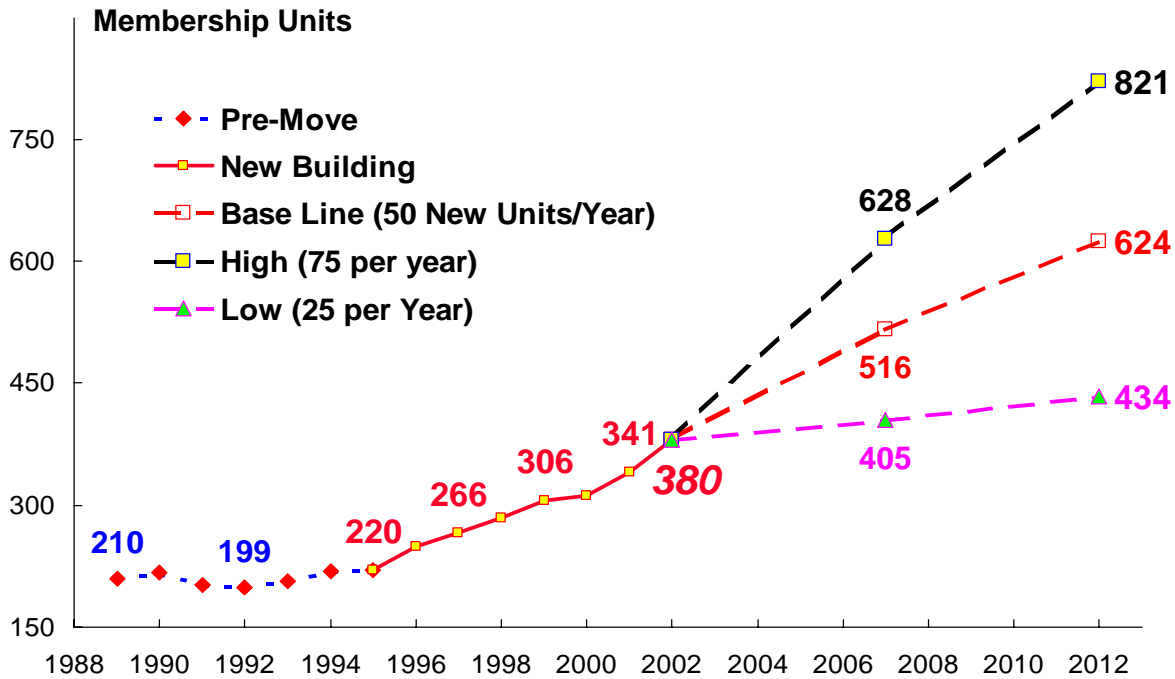
Tables available in Excel summarize in more detail the 9 alternative projections, but some generalizations emerge. First, under virtually any of the scenarios, the Congregation will continue to grow. In other words, even if we get only 25 new units per year, the Congregation is likely to keep growing, albeit slowly under the low growth scenarios. Under the higher growth scenarios, the Congregation could increase rapidly, reaching more than double its current size in less than 10 years.

The continued growth is due primarily to the reasonably high retention rates assumed, especially among empty nesters. This group will grow under virtually any scenario as the parents of the ‘90s age and their children graduate from high school. In the past, we have had very high retention of empty nesters. Continuation of this pattern will be important as the empty nesters represent a group with strong ties to the Congregation, “institutional memory,” and financial resources to provide support for Congregational activities.

The “nature” of the Congregation – i.e., the mix between families with children versus singles and couples, between young and old, between new and long-time members, and the size of the school – depend heavily on both the number of new member families and the different types that join. While the mix of new members may not be fully under Congregational control, the consequences can substantially affect some of the demands placed upon the Congregation. The alternative scenarios demonstrate some of the extremes possible.



Substantial Growth Projected at Current Recruitment Levels



This chart traces the growth in Temple Micah’s membership (in family units) under three different growth scenarios. With approximately the current level of recruitment – 50 new families per year – the Congregation will grow by roughly one-third over the next five years increasing by 136 families to 516 from the current 380. This growth trend would add another 108 families in the succeeding 5-year period leading to a Congregation of 624 families in 2011-12.

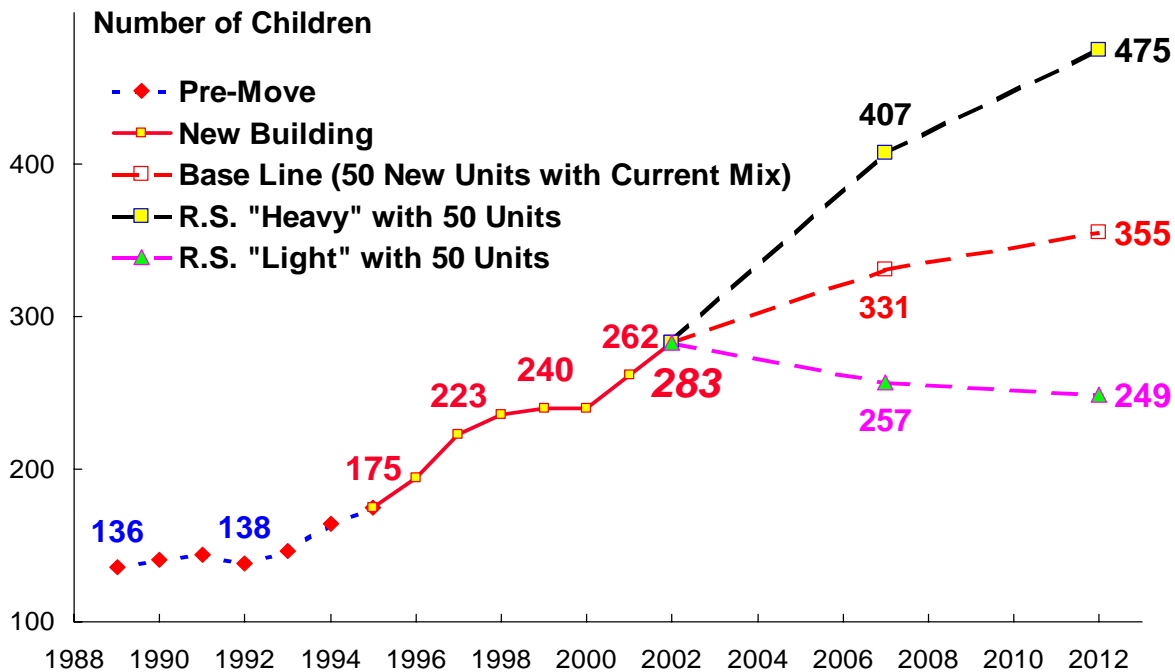
The high growth scenario which assumes recruiting 75 new families per year shows a net increase of 65% or 248 families over the next five years with the Congregation more than doubling to 821 families by 2011-12. The high scenarios may be quite unrealistic. For example, the annual additions under this scenario are slightly higher than recruitments in 2001-02, but the scenario assumes a continuation of this level for 10 years. In addition, the assumed retention rates are based on a period when average recruitments were much lower, so that more of the future new recruits may leave.

Even under the very low growth scenario of 25 new families per year, the Temple Micah will continue to grow, albeit slowly. At this level, the Congregation would add a net of 25 families over the next five years and an additional 29 over the next five to reach 434 families by 2011-12. Note that this is approximately double the number who built the building and made the move from Southwest. This scenario may be unrealistically low in that the smallest number of new families added in any year since the move has been 32 – a level one-quarter above the low assumption.

The main determinant of future Congregation size is the number of new families added, not the mix of new families. The different assumptions of types of families added only make a difference of 6-10 families around the “base” mix in 2011-12. For example, the highest projection is 830 families (not 821) and the lowest is 433 (not 434).



Growth of School-Age Population Depends on Mix of New Members



This chart traces the number of children in the Congregation under different mixes of new members. Note that all three projections assume 50 new units added per year, they differ only in the proportion of families with children. Although the total number of membership units in the Congregation differs very little under these alternative (808-830 in 2011-12), the possible number of children varies by almost 100% from 249 to 475. [As a rough “rule of thumb,” the size of the religious school is about two-thirds of the number of children.]

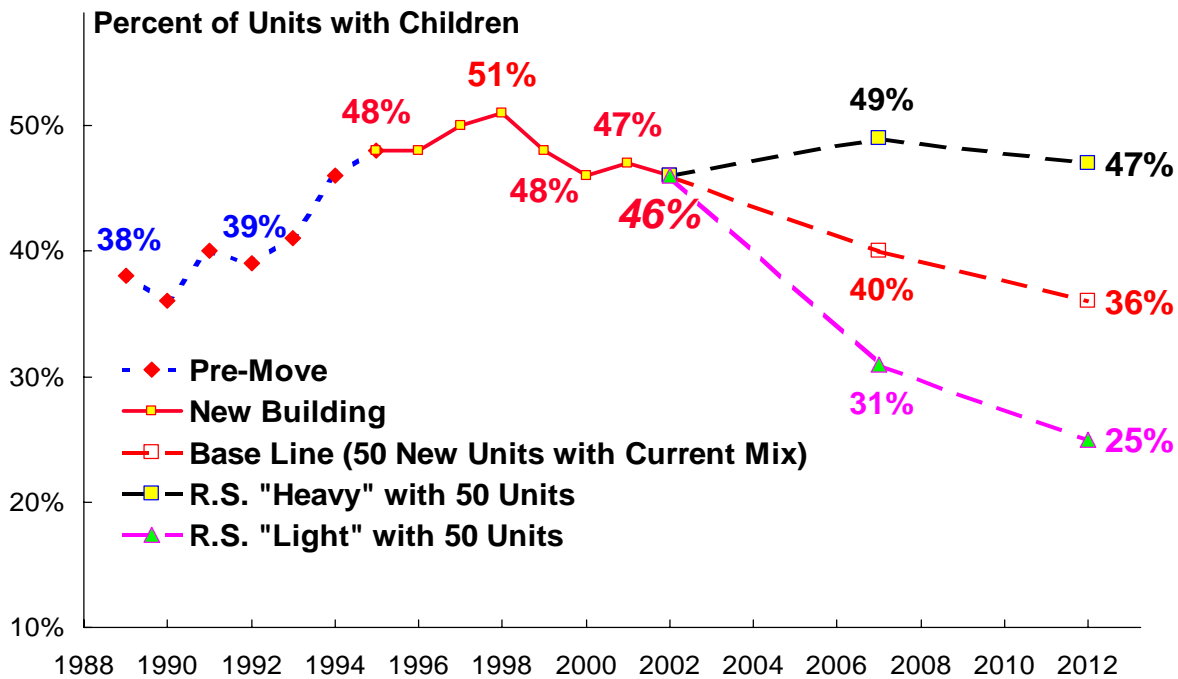
With current growth patterns, the number of children in the Congregation will increase by 17% over five years and by 25% over ten. This is a rather moderate rate of growth, and represents a slow down compared with our experience over the last 3 years or the last 6 years.

The “religious school heavy” assumption leads to a continuation of very recent patterns and to explosive growth in the number of children – adding 124 children or 44% in the next five years and 68 more in the succeeding 5 years. The highest growth scenario – 75 new families per year with a religious school heavy mix (not shown) – leads to 664 children in the Congregation in 2011-12!

In contrast, the “religious school light” scenarios show the child population leveling off at about 250 children or roughly the number we had during 1997-2000. The high growth scenario coupled with a religious school light mix maintains the number of children at a level only slightly above the current level for the entire 10-year projection horizon, reaching only 313 in 2011-12.

[Methodological note: I derive the number of children using average family sizes. The average family with the youngest child under 7 has 1.18 children under 7, 0.52 age 7-12, and 0.04 age 13-18; families with the youngest child aged 7-12 have, on average, 1.32 children aged 7-12 and 0.44 aged 13-18; families with the youngest child aged 13-18 have an average of 1.29 children in the age group. These averages use recent data from the 1997-2002 period. None of the other types of membership units has children under age 19, by definition.]

Proportion of Members with Children Can Vary Widely

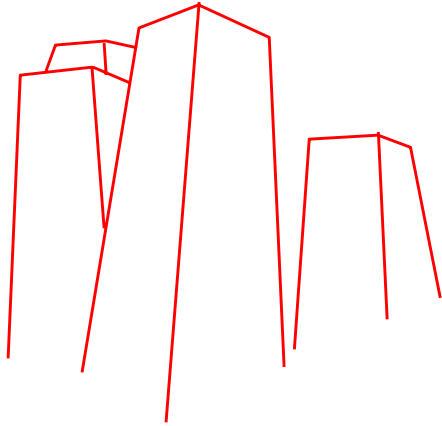


This chart combines the information used in the previous two charts to look at the proportion of membership units with children of school age. Historically, there was a significant change in membership in the early 1990s as the proportion of units with children grew from 37-40% to 48% at the time of the move. Then, the percentage increased a little more, reaching half the Congregation in 1997-98. Since then, the proportion has dropped to the high 40% range or halfway between the levels of a decade earlier and the peak. This pattern is reflected in the growing numbers of children, but note that the peak occurred before the rapid increase in the child population, suggesting that more recent members may have more children. Also, the increases in singles and couple members that have occurred since the move clearly have played a role in decreasing the percentage of membership units with children.

The projection scenarios encompass a very wide range of possibilities. This chart shows only the mid-range growth scenarios of 50 new families per year. Under the base scenario which assumes the current mix of new members, the proportion of units with school age children actually decreases gradually, reaching the historic levels of the early 1990s. (Recall, though that the numbers of children continue to grow under this scenario.) With the religious school light scenario (which results in a roughly constant number of children), the proportion of units with children falls to about one-quarter. Only under the religious school heavy assumption do we maintain the current mix of members with and without children. (This scenario does lead, however, to a much larger number of children in the Congregation.)

Each of the three "religious school light" scenarios leads to slightly less than one-quarter of the members with kids, albeit at quite different membership levels. In none of the "religious school heavy" scenarios does the proportion of members with school-age kids exceed 50%.





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TEMPLE
MIÇAH

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Planning Committee
April 10, 2002
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