

## GROWTH PROJECTIONS FOR THE MAD RIVER VALLEY

INTRODUCTION

These growth projections are a revision of projections prepared in June, 1980, for a design session on future land use in the Valley. The revisions are made primarily to incorporate 1980 Census data on population in the three towns and to illustrate how population growth rates experienced over the past twenty years relate to the projections for the future. The projections are then to be used to determine future land use and public facilities and services requirements in the Valley. Needs for residential, commercial and industrial land will be illustrated on a map according to several growth scenarios. Allocations of land use types will be made by town prior to developing these scenarios. The projections are not intended to describe the impacts of any particular development proposal but rather to illustrate the implications of a range of growth rates in order to assist the towns in developing growth management plans.

1960 to 1980 Population Growth Trends

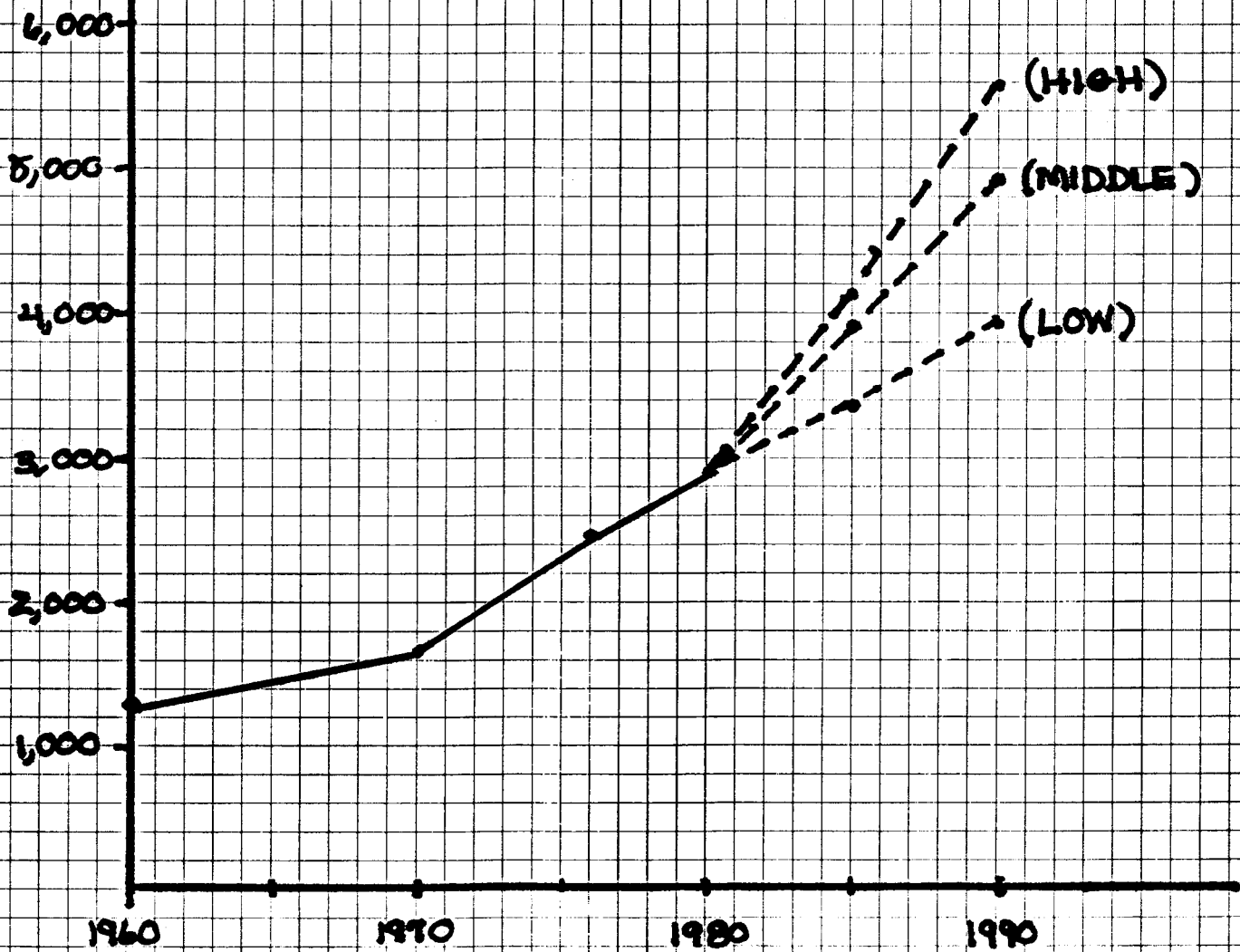
The Valley towns gained a net of 1,600 permanent residents between 1960 and 1980. Seventy-five (75%) percent of this growth occurred since 1970. The overall annual average rate of growth for the two decades was 4.2%. The rate accelerated between 1970 and 1976 and leveled off to 4.3% at the end of the decade. The tables below illustrate these trends.

Total Population - Valley Towns - 1960 to 1980

| <u>Year</u> | <u>Population</u> | <u>Total Increase</u> | <u>Average Annual Total Population Increase</u> |
|-------------|-------------------|-----------------------|---|
| 1960        | 1,285             |                       |   |
| 1970        | 1,717             | + 432                 | 43.2  |
| 1976        | 2,468             | + 751                 | 125.2   |
| 1980        | 2,917             | + 449                 | 112.3   |

Rates of Growth - Valley Towns - 1960 to 1980

| <u>Dates</u> | <u>Total Percentage Increase</u> | <u>Average Annual Percentage Increase</u> |                       |
|--------------|----------------------------------|---|-----------------------|
|              |                                  | <u>Compounded</u>                         | <u>Not Compounded</u> |
| 1960 - 1970  | 33.6%                            | 2.9%                                      | 3.4%                  |
| 1970 - 1976  | 43.7%                            | 6.2%                                      | 7.3%                  |
| 1976 - 1980  | 18.2%                            | 4.3%                                      | 4.6%                  |
| 1960 - 1980  | 127.0%                           | 4.2%                                      | 6.4%                  |
| 1970 - 1980  | 69.9%                            | 5.4%                                      | 7.0%                  |



CHANGE IN POPULATION, 1960 - 1990

————— historical data  
- - - - - projections

## METHODOLOGY FOR RATES OF GROWTH

Three rates of growth were used to establish low, medium and high forecasts of future population.

- A. Low Rate - A 3% annual growth rate was used to project a low rate of growth. This rate approximates the 1960 to 1970 annual average rate and is lower than growth rates more recently experienced. This rate assumes population will increase in the Valley at a slower pace than in the recent past due to the effects of energy costs and supply and a lower growth rate in employment opportunities. It assumes some increase in carrying capacity of the ski areas.
- B. Sustained Rate of Growth - The medium rate of growth of 5.4% assumes that the rate experienced over the last decade will continue and that there will be no dramatic changes affecting population in the Valley, such as maximum ski area expansion at all three ski areas or location of a large industry or industries. However, it does assume the Valley will continue to be attractive to visitors, investors, retirees, and people who work outside the Valley. It assumes a steady increase in comfortable carrying capacity at at least two ski areas.
- C. Resort/High Rate of Growth - The high rate of growth of 7.2% assumes that the Mad River Valley will take on the characteristics of a destination resort. The rate is based on a 5.3% annual increase in the present Comfortable Carrying Capacity of all three ski areas<sup>1</sup> and the application of western ski destination resort standards (See Appendix A for detailed description of these standards.). It is intended to represent the highest growth rate that can be presently anticipated in the Valley. The growth rate will decline somewhat between 1985 to 1990 to reflect the increase in population base from which the percentage is derived.

## BASE DATA, RATIOS AND LAND REQUIREMENTS USED FOR PROJECTIONS

Projections were based on the most up-to-date information available. Base data on current conditions in the Valley were assembled in order to develop ratios to apply to the projections for estimating increased school enrollments, housing units, commercial space, etc.<sup>2</sup> There were two types of base data and ratios developed -- 1) for estimating growth impacts from population increases and 2) for estimating growth impacts from ski area carrying capacity increases. The first set were used for the low and medium rates of growth and the second for the high rate of growth. For the most part, destination resort area ratios were used for the high projection; existing Valley ratios are included for purposes of comparison.

Land requirements have been based both on existing density patterns and zoning regulations. The requirements included with the projections indicate what the Valley will need in the way of residential, commercial and industrial space if these trends continue.

<sup>1</sup> By comparison, the Sugarbush Masterplan Proposal would result in an annual growth rate in CC of 3.9% if implemented over a twenty year period, or 5.3% if implemented in fifteen years.

<sup>2</sup> When the year for which one source was available differed from the year another was available, data were prorated where possible so that comparable years were used for developing ratios.

Data are also provided on schools and road improvements necessary to support Valley growth. These estimates are based on existing capacity of facilities and reflect when capacities will be exceeded by growth.

BASE DATA

Resident Population 1980: 2,917  
 Valley Ski Area Comfortable Carrying Capacity 1980: 8,200  
 School Children 1980: 530  
 Permanent Residences 1979: 915  
 Permanent Residential Building Permits 1972-1979: 456  
 Vacation Residences 1979: 1,340  
 Vacation Residential Building Permits 1972-1979: 763  
 Retail/Office Floor Space 1979: 155,000 SF  
 Bar/Restaurant Seats 1979: 3,000  
 Lodging Beds 1979: 1,930  
 Average Annual Covered Employment 1979: 1,520  
 Manufacturing Employment 1979: 50

RATIOS AND STANDARDS

|  | <u>Existing Valley</u> | <u>Destination Resort</u> |
|--|------------------------|---------------------------|
| School Children: Population                        | 1:5.5                  | 1:4                       |
| Average Household Size                             |                        |                           |
| Permanent Residence                                | 3.2                    | 2.5                       |
| Vacation Home                                      | NA                     | 3                         |
| Permanent Residential Permits:                     | 1:1.7                  | NA                        |
| Vacation Home Permits                              |                        |                           |
| Vacation Residences: CC                            | 1:4.2 <sup>1</sup>     | 1:1.5                     |
| Local Employment: Population                       | 1:2                    | 1:2.4                     |
| Industrial Employment: Population                  | 1:58                   | NA                        |
| Local Employment: CC                               | 1:5.4                  | 1:5.7 (x .68 sec. job)    |
| Retail/Office Space Per Housing Unit <sup>2</sup>  | 70 SF                  | NA                        |
| Retail/Office Space Per CC                         | 20 SF                  | 30 SF                     |
| Bar/Restaurant Seats Per Housing Unit <sup>2</sup> | 1.3 seats              | NA                        |
| Bar/Restaurant Seats Per CC                        | .4 seats               | NA                        |

LAND REQUIREMENTS

Residential

Permanent                    2 acres/unit  
 Vacation Home              0.1 acres/unit

Commercial

Retail and Office        0.1 Floor Area Ratio  
 Restaurants & Bars      1 acre/100 seats

<sup>1</sup> Incorporates lodging with vacation homes assuming 3 beds per unit of lodging to be consistent with western resort data.

<sup>2</sup> Permanent and Seasonal.

**Industry**

**1 acre/10 employees**

**Schools**

**10 acres/elementary school**

**20 acres/middle school**

**30 acres/high school**

LOW ESTIMATE  
GROWTH PROJECTIONS

| GROWTH SECTORS  | 1985  | 1990                    | TOTAL               |
|---|---|-------------------------|---------------------|
| Rate of Growth  | 3.0   | 3.0                     |                     |
| Additional Carrying Capacity  |   |                         |                     |
| Additional Resident Population  | 465   | 540                     | 1,005               |
| Additional School Children  | 85  | 100                     | 185                 |
| Additional Permanent Resident Dwelling Units                          | 145   | 170                     | 315                 |
| Additional Vacation Dwelling Units                                    | 240   | 285                     | 525 <sup>1</sup>    |
| Additional Retail/Office Floor Space                                  | 27,000  | 32,000                  | 59,000 <sup>1</sup> |
| Additional Bar/Restaurant Seating Capacity                            | 500   | 590                     | 1,090 <sup>1</sup>  |
| Additional Industrial Jobs  | 8   | 9                       | 17                  |
| <b>FACILITIES AND LAND REQUIREMENTS (ACRES)</b>                       |   |                         |                     |
| Residential<br>Permanent<br>Vacation Home                             | 290<br>24   | 340<br>28.5             | 630<br>52.5         |
| Commercial <sup>1</sup> - Retail and Office<br>- Restaurants and Bars | 11 { 6<br>5   | 13 { 7<br>6             | 24 { 13<br>11       |
| Industrial  | 1   | 1                       | 2                   |
| Schools   | Additions to existing and/or Middle School<br>1 middle school - 25 acres<br>@ 20 acres. |                         |                     |
| Roads (based on present land use distribution trends)                 |   |                         |                     |
| Sugarbush Access Road   | Widen intersection w/ Rt. 100   | Provide climbing lanes. |                     |
| Rt. 100/Rt. 17  | Change to "T" Intersection  | Traffic Signal          |                     |
| Rt. 100 @ Slow Road   | Widen for left turn lanes.  |                         |                     |
| Rt. 100 @ Mad River Green   | Widen for left turn lanes.  |                         |                     |
| Sugarbush Access/German Flats Road                                    | Redefine intersection for left turn lanes   |                         |                     |

<sup>1</sup>Includes an estimated 47,000 s.f. of existing underutilized space. Net additional commercial space: 40,000 s.f.

MIDDLE ESTIMATE  
GROWTH PROJECTIONS

| GROWTH SECTORS   | 1985  | 1990                           | TOTAL         |
|--|---|--------------------------------|---------------|
| Rate of Growth   | 5.4   | 5.4                            |               |
| Additional Carrying Capacity                                   |   |                                |               |
| Additional Resident Population                                 | 880   | 1,140                          | 2,020         |
| Additional School Children                                     | 160   | 205                            | 365           |
| Additional Permanent Resident Dwelling Units                   | 275   | 355                            | 630           |
| Additional Vacation Dwelling Units                             | 460   | 595                            | 1,055         |
| Additional Retail/Office Floor Space                           | 51,000  | 66,500                         | 117,500       |
| Additional Bar/Restaurant Seating Capacity                     | 955   | 1,235                          | 2,190         |
| Additional Industrial Jobs                                     | 15  | 20                             | 35            |
| <b>FACILITIES AND LAND REQUIREMENTS (ACRES)</b>                |   |                                |               |
| Residential  |   |                                |               |
| Permanent  | 550   | 710                            | 1,260         |
| Vacation Home  | 46  | 60                             | 106           |
| Commercial <sup>1</sup> - Retail and Office Bar and Restaurant | 22 { 12<br>10   | 27 { 15<br>12                  | 49 { 27<br>22 |
| Industrial   | 1.5   | .2                             | 3.5           |
| Schools  | Could vary w/ distribution of residential uses between towns. Middle-20 acres | 1 Elementary Middle - 25 acres |               |
| Roads  |   |                                |               |
| Sugarbush Access Road  | Provide climbing lane and widen intersection w/ Rt. 100                       | Traffic Signal                 |               |
| Rt. 100 @ Rt. 17   | Change to "T" Intersection  |                                |               |
| Rt. 100 @ Slow Road  | Traffic Signal  |                                |               |
| Rt. 100 @ Mad River Green                                      | Traffic signal and widen for left turns                                       | Consider bypass route          |               |
|  | Provide left turn lane  |                                |               |

<sup>1</sup>Includes an estimated 47,000 s.f. of existing underutilized space. Net additional commercial space: 125,250 s.f.

(Continued)

MIDDLE ESTIMATE  
GROWTH PROJECTIONS

| GROWTH SECTORS                                      | 1985                        | 1990              | TOTAL |
|---|-----------------------------|-------------------|-------|
| <b>FACILITIES AND LAND<br/>REQUIREMENTS (ACRES)</b> |                             |                   |       |
| Rt. 100 @ Commons Road                              |                             | Traffic<br>Signal |       |
| Sugarbush Access - German Flats Road                | Provide left<br>turn lanes. |                   |       |



HIGH ESTIMATE  
GROWTH PROJECTIONS

| GROWTH SECTORS                                  | 1985  | 1990  | TOTAL                |
|---|---|---|----------------------|
| Rate of Growth                                  | 7.2   | 6.6   |                      |
| Additional Carrying Capacity                    | 2,500   | 3,000   | 5,500                |
| Additional Resident Population                  | 1,215   | 1,550   | 2,765                |
| Additional School Children                      | 220   | 280   | 500                  |
| Additional Permanent Resident Dwelling Units    | 485   | 620   | 1,105                |
| Additional Vacation Dwelling Units              | 1,650   | 2,000   | 3,650 <sup>1</sup>   |
| Additional Retail/Office Floor Space            | 75,000  | 90,000  | 165,000 <sup>1</sup> |
| Additional Bar/Restaurant Seating Capacity      | 1,000   | 1,200   | 2,200                |
| Additional Industrial Jobs                      | 43  | 52  | 95                   |
| <b>FACILITIES AND LAND REQUIREMENTS (ACRES)</b> |   |   |                      |
| Residential                                     |   |   |                      |
| Permanent                                       | 970   | 1,240   | 2,210                |
| Vacation Home                                   | 165   | 200   | 365                  |
| Commercial <sup>1</sup>                         | 27  | 33  | 60                   |
| Retail/Office                                   | 17  | 21  | 38                   |
| Bar/Restaurant                                  | 10  | 12  | 22                   |
| Industrial                                      | 4   | 5   | 9                    |
|   | Could vary w/ distribution of residential uses between towns. Middle-20 acres | 1-3 Elementary Schools Middle - 25 acres High School Addition |                      |
| Roads <sup>2</sup>                              |   |   |                      |
| Sugarbush Access Road @ Rt. 100                 | Traffic Signal Recommended  |   |                      |
| Rt. 100 @ Rt. 17                                | Traffic Signal Recommended  |   |                      |
| Rt. 100 @ Slow Road                             | Traffic Signal Recommended  |   |                      |
| Rt. 100 and Shopping Centers                    | Bypass Route  |   |                      |
| Rt. 100 @ Waitsfield Center                     | Traffic Signal Recommended  | Bypass Route  |                      |

<sup>1</sup> Includes an estimated 47,000 s.f. in existing underutilized space. Net additional commercial space: 173,000 s.f.

<sup>2</sup> In addition to improvements listed under middle estimate.

(Continued)

HIGH ESTIMATE  
GROWTH PROJECTIONS

| GROWTH SECTORS                           | 1985                    | 1990 | TOTAL |
|--|-------------------------|------|-------|
| FACILITIES AND LAND REQUIREMENTS (ACRES) |                         |      |       |
| German Flats Road                        | Improve Geometrics      |      |       |
| Sugarbush Access/German Flats Road       | Provide left turn lanes |      |       |

## APPENDIX: DESTINATION RESORT PROJECTIONS

The destination resort (high) growth rate is based on standards from western ski destination resorts and assumes that should the Valley become the location of a ski destination resort, existing standards in the Valley will no longer be applicable.

The method for developing the high rate of growth projections was as follows:

1. Apply 5.3% average annual increase in CC to existing Valley CC.
2. Apply destination resort ratio of jobs to CC to projected Valley CC.
3. Subtract 50 jobs to reflect percent of active applicants for employment in Valley presently who could fill new jobs, and jobs that could be filled as second income to existing families.<sup>1</sup>
4. Subtract 25% of jobs to reflect employees who will live outside the Valley.
5. Divide remaining jobs by .42 (the labor participation rate of residents) to obtain projected resident population.

<sup>1</sup> Note that between 1985 to 1990, this figure will decline to 25 to reflect active applicants who have filled jobs.

ASSUMPTIONS AND CRITERIA FOR DEVELOPMENT OF VALLEY GROWTH SCENARIOS

MIDDLE ESTIMATE

Permanent Housing: 630 Units - 1990

|            | <u>Percent</u> | <u>Units</u> |
|------------|----------------|--------------|
| Fayston    | 33.3%          | 210          |
| Waitsfield | 33.3%          | 210          |
| Warren     | 33.3%          | 210          |

Note: Allocations based on recent population trends and increase in permanent residential parcels on Grand List.

Vacation Housing: 1,050 Units - 1990

|                  | <u>Concentrated Units (80%)</u> |                | <u>Acres-A</u> | <u>Acres-B</u> |
|------------------|---------------------------------|----------------|----------------|----------------|
|                  | <u>Units</u>                    | <u>Density</u> |                |                |
| Sugarbush Valley | 420                             | 10-25 U/A      | 42A            | 34A            |
| Sugarbush North  | 420                             | 10-25 U/A      | 42A            | 34A            |

Scattered Units (20%)

|            | <u>Units</u> | <u>Density</u> |
|------------|--------------|----------------|
| Fayston    | 60           | 1-5 U/A        |
| Waitsfield | 10           | 1-5 U/A        |
| Warren     | 140          | 1-5 U/A        |

Note: Allocations of concentrated units based on location of new carrying capacity. Allocations of scattered units based on recent patterns and Sugarbush plans.

| Commercial Development: | <u>Percent</u> |
|-------------------------|----------------|
| Waitsfield              | 80%            |
| SBV/SBN                 | 5-10%          |
| Scattered               | 10-15%         |

Note: Allocations based on recent trends, zoning and ski area plans.

HIGH ESTIMATE

Permanent Housing: 1,105 Units - 1990

|            | <u>Percent</u> | <u>Units</u> |
|------------|----------------|--------------|
| Fayston    | 33.3%          | 370          |
| Waitsfield | 33.3%          | 370          |
| Warren     | 33.3%          | 370          |

Note: Allocations based on recent population trends and increase in permanent residential parcels on Grand List.

Vacation Units: 3,650 Units - 1990

|                                  | <u>Concentrated Units (80%)</u> |                |                |                |
|----------------------------------|---------------------------------|----------------|----------------|----------------|
|                                  | <u>Units</u>                    | <u>Density</u> | <u>Acres-A</u> | <u>Acres-B</u> |
| Sugarbush Valley                 | 730                             | 10-25 U/A      | 73             | 60             |
| Sugarbush North<br>& Slide Brook | 2,190                           | 10-25 U/A      | 220            | 178            |

|            | <u>Scattered Units (20%)</u> |                |
|------------|------------------------------|----------------|
|            | <u>Units</u>                 | <u>Density</u> |
| Fayston    | 220                          | 1-5 U/A        |
| Waitsfield | 35                           | 1-5 U/A        |
| Warren     | 475                          | 1-5 U/A        |

Note: Allocations of concentrated units based on location of new carrying capacity. Allocations of scattered units based on recent patterns and Sugarbush plans.

| Commercial Development:        | <u>Percent</u> |
|--------------------------------|----------------|
| Waitsfield                     | 40%            |
| Sugarbush No.<br>& Slide Brook | 40%            |
| Sugarbush Valley               | 7.5%           |
| Dispersed                      | 12.5%          |

Note: Allocations assume destination resort results in substantial increase in commercial development where additional CC located and continued demand for commercial space in Waitsfield from new population.

IMPACTS FROM GROWTH PROJECTIONS

| <u>AREA OF IMPACT</u> | <u>NATURE OF IMPACT</u>   | <u>POSSIBLE SOLUTIONS</u>  |
|-----------------------|---|--|
| SCHOOLS               | 1985 - Waitsfield Elementary and Harwood Union exceed capacity.   | 1) Additions to 2 schools.<br>2) Development of middle school.   |
|                       | 1990 - All schools exceed capacity.   | 1) Additions to 4 schools.<br>2) Development of middle school.   |
| POLICE SERVICES       | Continued accelerated growth of crime incidents.  | 1) 3 Trooper Valley outpost (proposed to '81 Legislature).   |
|                       | Traffic congestion.   | 2) Hire traffic control officers for peak periods.<br>3) Private security for vacation home developments.<br>4) Traffic improvements.  |
|                       | Increased fire calls from vacation home centers.  | 1) Form municipal compact between Fayston and Warren to assess taxes for fire protection.  |
|                       | Additional water supply requirements in existing and projected centers.                                       | 2) Form water district.<br>3) Make water supply requirements through subdivision regulations.<br>4) Through zoning, set maximum density and minimum setbacks for PUD's.  |
| ELECTRIC UTILITIES    | Substation improvements or additional circuit to Sugarbush within one to two years.                           | 1) Scheduled by GMP. Cost \$100,000-200,000.   |
|                       | Transmission improvements to Irasville by 1985.   | 2) In planning stage by GMP. Cost \$550,000.   |
|                       | New transmission line to Valley by 1990.  | 3) Long-range plans by GMP.  |
| HOUSING               | New permanent housing increase from 315-1,100 units by 1990.  | 1) Zone high density areas in each town (30-50A).  |
|                       | Distribution of housing among 3 towns may vary, thus impacts of housing may affect one town more than others. | 2) Require major employment generators to provide housing or set aside land for low to moderate income housing.<br>3) Develop a tax base sharing program.<br>4) Explore further housing programs that could assist all 3 towns.<br>5) Give density bonus for providing low to moderate income housing. |

IMPACTS FROM GROWTH PROJECTIONS  
(Continued)

AREA OF IMPACT

MUNICIPAL FINANCE

NATURE OF IMPACT

Pressure for town-wide reappraisal.  
Increase per-capita tax burdens, due to  
increased costs primarily for schools,  
roads, general administration.

POSSIBLE SOLUTIONS

- 1) Reappraisals
- 2) May be off-set by tax revenues from  
commercial and recreation development;  
However, benefits may vary by town.
- 3) Tax-base sharing.

ZONING

TRAFFIC