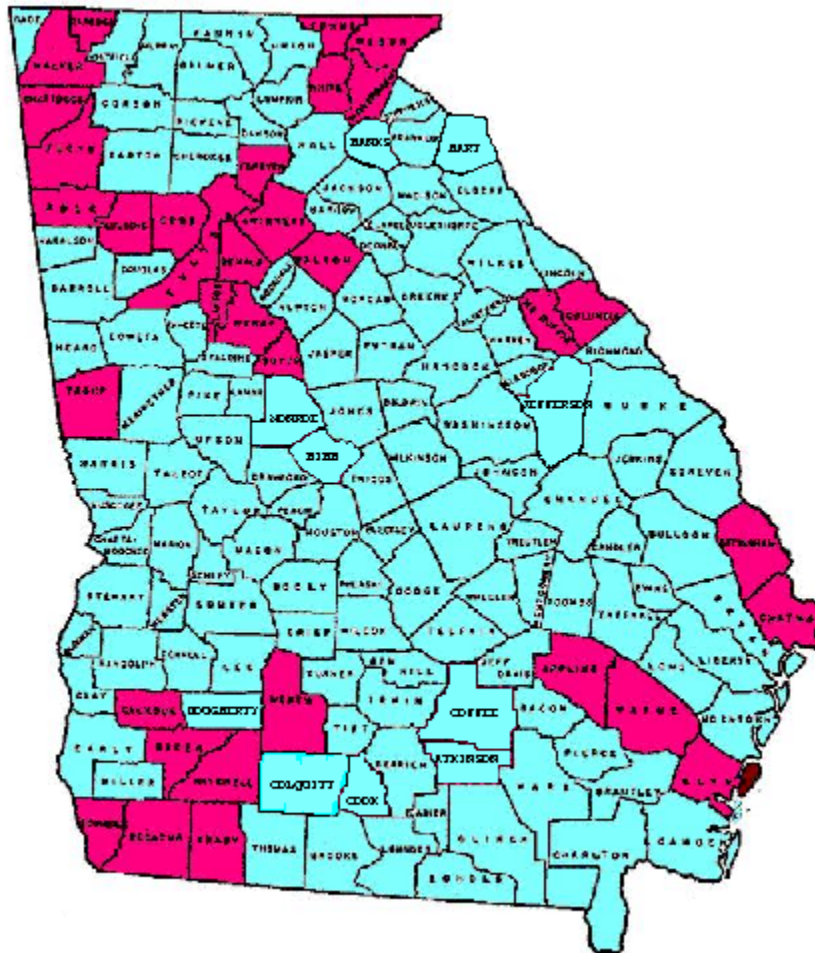


WinGAP Residential Pricing and Schedules including Accessories and Rural Land

Application, Development, and Maintenance



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Introduction

In the valuation of residential improvements, WinGAP uses a system that allocates points for structural components such as area, plumbing, heating, etc. Adjustments for exterior walls, heating type, story height, and quality of construction are applied to the points. The points are converted to dollars by application of the residential improvement point cost. The point cost is derived from the analysis of residential sales within the county.

Accessory improvements are valued using the same methodology as described for residential structures with the exception of adjustments for plumbing, heating, etc. Base values are assigned to a county defined accessory listing. Adjustments for quality of construction are applied based on a grade assignment. Replacement Cost New Values are adjusted using obsolescence and depreciation.

In an effort to create a pricing mechanism that is easier to understand, WinGAP displays the pricing schedule information for residential and accessory improvements as actual dollars. Even though the relationship of points and point cost is still in effect, the association is transparent to the user. However, references to the points/point cost/value relationship will often be made in an effort to provide an understanding of the underlying calculations and the effect of modifying a component of the process.

The methodology used in the valuation of rural land follows the details in the Appraisal Procedures manual. Rural land is segregated into small parcels and large tracts with schedules designed to accommodate the various characteristics of each. Base per acre values are established and are adjusted based on size/location factors.

The development and maintenance of schedules for residential and accessory improvements should be of primary concern to the county appraisal staff. Residential and accessory improvements and associated land normally constitute the largest number of properties in a county offering a greater possibility of discussion with a property owner. Thus, an understanding of schedule functionality and the derivation of the values "plugged" into the tables should be of importance to the appraiser.

The goals of this course are to:

- ❑ *Provide the appraiser with information regarding access to the various schedules in WinGAP*
- ❑ *Acquaint the appraiser with the use of the schedules through the manual calculation process*
- ❑ *Provide methodology for deriving a residential improvement point cost*
- ❑ *Demonstrate how to fine tune schedules with neighborhood codes and adjustments.*

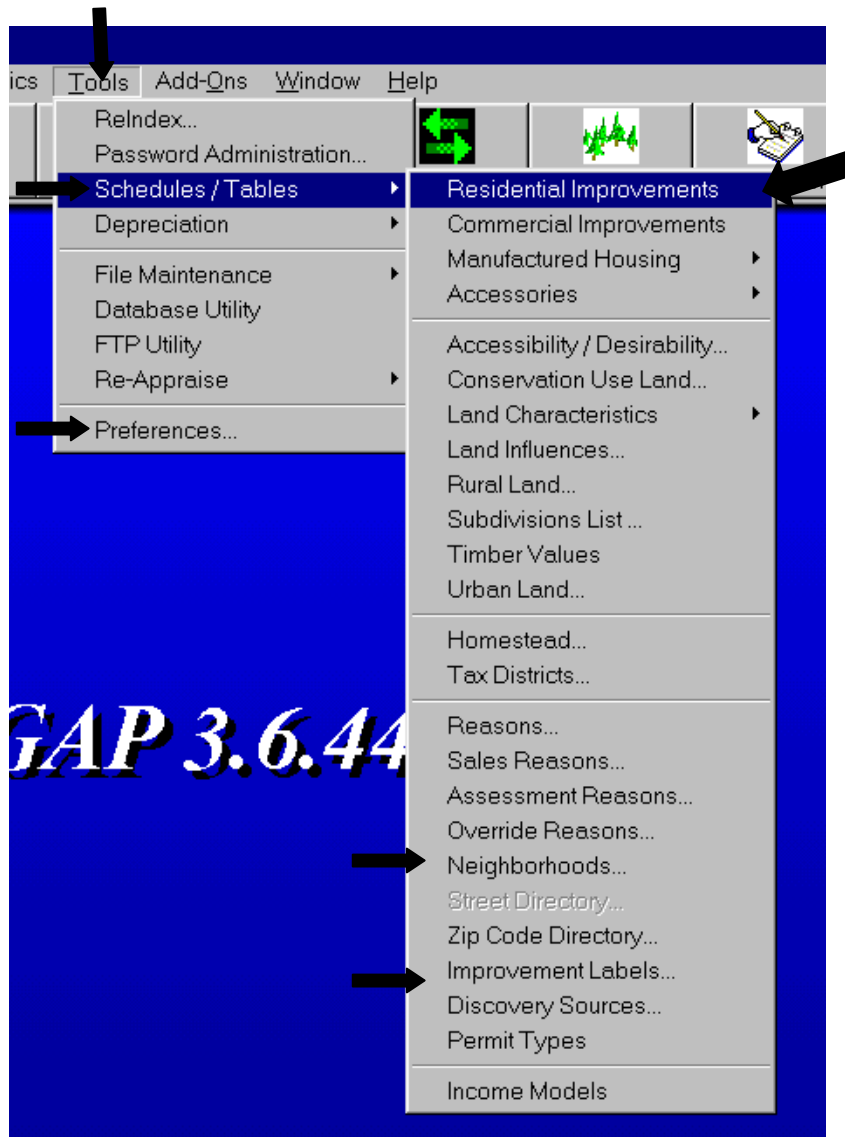
Examples will be given on the use of the various procedures. Exercises will also be provided to provide the attendee an opportunity to practice the procedures.

Residential Improvement Schedules

Introduction

All of the residential improvement schedules with the exception of Neighborhoods, Improvement Labels, Point Cost and Depreciation Year are found on the **Tools >> Schedules / Tables >> Residential Improvements** Menu. The **Neighborhood Influences** are found at the menu option **Tools >> Schedules / Tables >> Neighborhoods**. Access to **Improvement Labels** and associated pricing information, such as cost per square foot and story height adjustments, is provided via the **Tools >> Schedules / Tables Menu >> Improvement Labels**. **Point Cost** and **Depreciation Year** for residential improvements can be accessed via **Tools >> Preferences**. Access to these tables and menu options will be restricted with the use of passwords and the assignment of rights to edit items contained within.

The example below shows the **Tools Menu** with all of its options and submenus including those for **Residential Improvements**. Menu options can be chosen by clicking on the option or using the directional arrows to highlight the option and the pressing the enter key.



Preferences

Clicking on the **Tools Menu** option **Preferences** produces the form shown below.

The screenshot shows the 'WinGAP - Preferences' dialog box. It is divided into several sections:

- County Information:** Includes fields for County Name (Jones), Address (Jones County Government Center), P O Box (1359), City / State / Zip (Gray, 31032), Phone / Ext. ((478)986-6300), Fax ((478)986-6504), Email, and Web.
- Point/Base Costs:** A table with columns for category and value:

Residential	100.00
Commercial	100.00
Commercial Base	1.00
Accessory	100.00
- Depreciation Years:** A table with columns for category and year:

Residential	2001
Commercial	2001
MFG Housing	2001
Accessory	2001
- Other Options:** Includes checkboxes for Truncate Values, Disable Logins, bBrowser Cost Form, Lock System, and Round Area Mult to 6 dec. (checked).
- Appraisal Year:** A dropdown menu set to 2008.
- Freeport Raw Material %:** 0.00
- Freeport Finished Goods %:** 0.00
- Freeport Out of State %:** 0.00
- ABOS Default Land Influences:** 2004

Callouts point to the following fields:

- Truncate Values:** Used to set truncation "on" for all properties including Residential Improvements.
- Depreciation Year for Residential Improvement:** Points to the Residential field in the Depreciation Years table.
- Appraisal Year used in determining default Year Built ofimps:** Points to the Appraisal Year dropdown.
- Point Cost for Residential Improvements:** Points to the Residential field in the Point/Base Costs table.
- Round Area Multiplier for Residential Improvements:** Points to the Round Area Mult to 6 dec. checkbox.

The fields and controls on the **Preferences** screen that are relative to residential improvements are:

- Residential Improvement Point Cost**
- Residential Improvement Depreciation Year**
- Manufactured Housing Depreciation Year**
- Appraisal Year**
- Truncate Values**
- Round Area Mult to 6 Decimals**

The **Residential Improvement Point Cost** is an index that is applied to the accumulated points of a structure to produce a dollar figure. For example, if a house has a total of 300 points and the point cost is 100.00, a house value of \$30,000 would result from the calculation of $300 * 100.00$. This county index should be derived from the analysis of residential sales within the county. The Residential Improvement Point Cost Section of this manual is dedicated to the calculation of the residential improvement point cost. For some appraisers and taxpayers, a dollar per square foot approach is more easily understood than the point system, though the value produced should be the same. Both methods will be discussed in Chapter IV, Residential Improvement Point Cost Study.

The **Residential Improvement Depreciation Year (RIDY)** is used to calculate the age of a house for the purpose of applying the proper depreciation. The RIDY is used, in lieu of the calendar year, to stabilize depreciation and values. If the calendar year were used to calculate the age of houses, value changes would occur each year because of the increasing amount of depreciation. With the use of the RIDY, the appraiser has control over the timing of the application of new depreciation. Normally, this is done when the residential improvement point cost is updated.

The **Manufactured Housing Depreciation Year** is the base year from which the system generated depreciation for Manufactured Housing is calculated. The age of a Mobile Home is determined by subtracting the year built or effective year built from the depreciation year. This locks depreciation in until the county decides to change it. Like Residential Improvements, any Mobile Homes with a year built greater than the depreciation year will be determined to have an effective age of zero years.

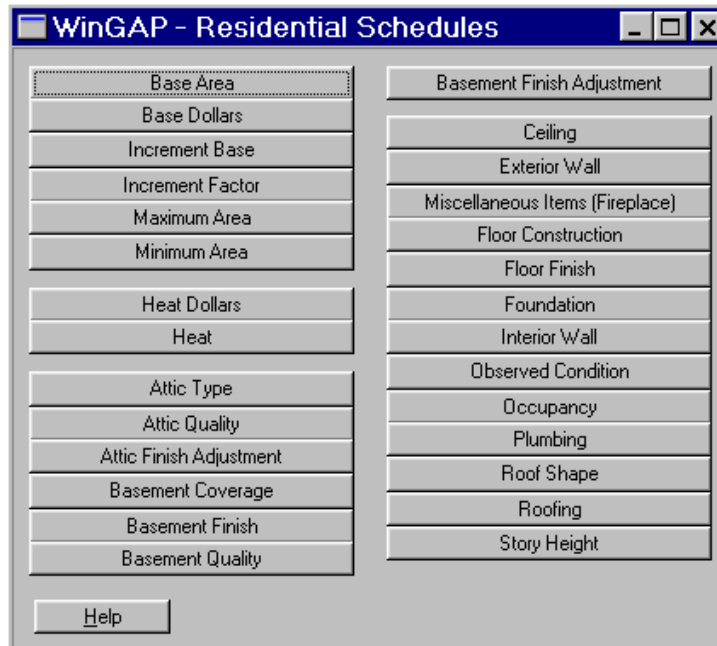
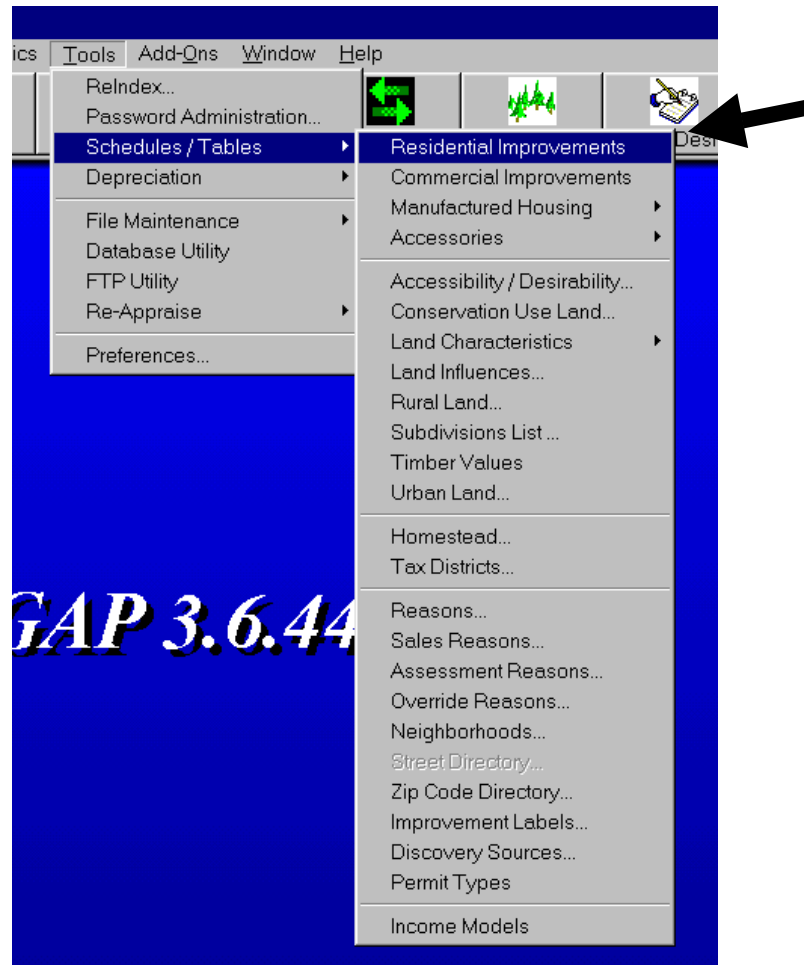
The **Appraisal Year** is used in the determination of the default Year Built for new residential improvements. During the entry of a new residential improvement, the Year Built will default to a year that is one less than the Appraisal Year. In the case of the Appraisal Year of 2008 shown in the image on the previous page, a Year Built of 2007 (2008 – 1) would be assigned to each newly entered residential improvement.

When **Truncate Values** is checked and the replacement cost new – depreciation is greater than 1000, a calculation will result in a value that is truncated to the nearest 100. If the replacement cost new – depreciation value (RCN-dep) is less than 1000, the fair market value is truncated to the nearest 10. Truncation is accomplished by dividing the RCN-dep value by 100 and not rounding the result. The resulting quotient is then multiplied by 100. In the following example, the RCN-dep value of 98,877 is truncated to 98,800:

1. $98,877 / 100 = 988$
2. $988 * 100 = 98,800$

The **Round Area Multiplier to 6 Decimals** checkbox, if checked, will round the residential improvement area multiplier to 6 decimal places instead of 2. Checking the box will result in value changes for almost all Residential Improvements but will remove an anomaly in the Area Multiplier calculation that is present when the Area Multiplier is rounded to 2 decimal places.

Residential Schedules Submenu



The **Residential Schedules** submenu, as shown on the previous page, along with other items, contains options with parameters that affect the calculation of base points/dollars for the heated area, basements, attics, and heating. Those options are:

- Base Area*
- Minimum Area*
- Maximum Area*
- Increment Base*
- Increment Factor*

The parameters contained within these schedules allow the appraiser to differentiate value based on size and the calculation of area multipliers. Each of the parameters will be discussed below.

Base Area

The **Base Area** represents the square footage where no size adjustment is made. In other words, the area multiplier is 1.00 at this area level. It most likely represents the standard house size for a county. As square footage decreases from the base area (the improvement becomes smaller), the cost per square foot increases. As residential improvements increase in size from the base area, the cost per square foot would decrease. A base area can be determined by calculating the median size of houses that have sold. If the base area is changed, other parameters such as min area, max area, etc may also need modification to produce accurate values.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP BASE AREA". The dialog is divided into several sections. On the left is a large, empty text area. On the right, there are input fields for "Code:" and "Descrip:". Below these is a section titled "Values" containing three rows of input fields: "Area" with a value of "1500", "\$ / Square Feet" with a value of "0.00", and "Cost Multiplier" with a value of "0.00". At the bottom of the dialog are several buttons: "Help", "Cancel", "New", "Delete", "Apply", and "OK".

The Base Area is edited by clicking in the **Area** field, keying in a new value, and clicking the OK button, which returns the user to the Residential Schedules Form. The Area field is the only field on the Base Area Form which is accessible to the user and whose value can be changed. Clicking OK returns the user to the main WinGAP screen.

The Base Area should not be changed in a County without performing significant market studies to determine whether the Base Area should be increased or decreased.

Minimum Area

The **Minimum Area** is the square footage level below the base area at which the cost per square foot stabilizes. Improvements with square footage below the minimum area will be calculated at the same dollar per square foot cost as those at the minimum area.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP MIN AREA". It features a large empty text area on the left. On the right, there are input fields for "Code:" and "Descrip:". Below these is a "Values" section with three rows: "Area" with a value of 500, "\$ / Square Feet" with a value of 0.00, and "Cost Multiplier" with a value of 0.00. At the bottom, there are buttons for "Help", "Cancel", "New", "Delete", "Apply", and "OK".

Maximum Area

The **Maximum Area** is the square footage level above the base area at which the cost per square foot stabilizes. Improvements with square footage above the maximum area will be calculated at the same dollar per square foot cost as those at the maximum area.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP MAX AREA". It features a large empty text area on the left. On the right, there are input fields for "Code:" and "Descrip:". Below these is a "Values" section with three rows: "Area" with a value of 3000, "\$ / Square Feet" with a value of 0.00, and "Cost Multiplier" with a value of 0.00. At the bottom, there are buttons for "Help", "Cancel", "New", "Delete", "Apply", and "OK".

Increment Base

The **Increment Base** defines the square foot interval at which the cost per square foot changes. An increment base of 50 indicates that the cost will change every 50 square feet. A decrease of the increment base would result in a more rapid change in the cost per square foot. A larger increment base would slow the rate of change. The increment base is constant throughout the calculation of the cost per square foot.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP INC BASE". It features a large empty text area on the left. On the right, there are input fields for "Code:" and "Descrip:". Below these is a "Values" section with three input fields: "Lump Sum \$" with a value of 0, "Area Inc" with a value of 50.00, and "Cost Multiplier" with a value of 0.00. At the bottom, there are buttons for "Help", "Cancel", "New", "Delete", "Apply", and "OK".

Increment Factor

The **Increment Factor** determines the rate at which the cost per square foot changes at each increment base. It is a factor and not a value that is added or subtracted from the base cost. Caution must be exercised when changing the increment factor. A factor too large can result in a situation where a larger house may have a total value less than that of a smaller house with the same characteristics other than size. A change in this factor, as well as any of the other parameters in this table, will result in a value change for all residential improvements. It might be prudent to change the increment factor at the time of a point cost update.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP INC FACTOR". It features a large empty text area on the left. On the right, there are input fields for "Code:" and "Descrip:". Below these is a "Values" section with three input fields: "Lump Sum \$" with a value of 0, "Factor" with a value of 0.005000, and "Cost Multiplier" with a value of 0.00. At the bottom, there are buttons for "Help", "Cancel", "New", "Delete", "Apply", and "OK".

Area Multiplier Calculations

Area Multiplier = (((Base Area – TBA) / Inc Base) * Inc Fact) + 1.00 {rounded to 6 decimals} is the formula used in the calculation of an area multipliers for total base area.

For basements and attics the formula being applied is:

(((Base Area – TBA) / Inc Base) * Inc Fact) + 1.00 {rounded to 3 decimals}

The area multiplier is used in the determination of a rate per square foot for heated area, base heating, attics and basements. The following table shows the results of changing the base area, increment base and increment factor.

TBA	Base Area	Inc Base	Inc Factor	Area Mult
2500	1500	50	0.0050	0.900000
2500	1500	25	0.0050	0.800000
2500	1500	100	0.0050	0.950000
2500	1500	50	0.0035	0.930000
2500	1500	25	0.0035	0.860000
2500	1500	100	0.0035	0.965000
1750	1500	50	0.0050	0.975000
1750	1500	25	0.0050	0.950000
1750	1500	100	0.0050	0.987500
1750	1500	50	0.0035	0.982500
1750	1500	25	0.0035	0.965000
1750	1500	100	0.0035	0.991250
1000	1500	50	0.0050	1.050000
1000	1500	25	0.0050	1.100000
1000	1500	100	0.0050	1.025000
1000	1500	50	0.0035	1.035000
1000	1500	25	0.0035	1.070000
1000	1500	100	0.0035	1.017500
600	1500	50	0.0050	1.090000
600	1500	25	0.0050	1.180000
600	1500	100	0.0050	1.045000
600	1500	50	0.0035	1.063000
600	1500	25	0.0035	1.126000
600	1500	100	0.0035	1.031500
2500	2000	50	0.0050	0.950000
2500	2000	25	0.0050	0.900000
2500	2000	100	0.0050	0.975000
1750	2000	50	0.0050	1.025000
1750	2000	25	0.0050	1.050000
1750	2000	100	0.0050	1.012500
1000	2000	50	0.0050	1.100000
1000	2000	25	0.0050	1.200000
1000	2000	100	0.0050	1.050000
600	2000	50	0.0050	1.140000
600	2000	25	0.0050	1.280000
600	2000	100	0.0050	1.070000

Base Dollars

The Base Dollars Per Square Feet (Base d/s/f) represents the base dollars per square foot for the residential improvement. It must be remembered that this value is a function of the residential improvement point cost found in Preferences. The value keyed in the \$/Square Feet field is saved as a point per square foot value using the following formula: $\$/\text{Square Feet} / (\text{point cost} / 100)$. A similar formula ($\$/\text{Square Feet} * (\text{point cost}/100)$) is used to display the \$ / Square Feet data. In our example, the calculation would be as follows:

$$40.00 * (100 / 100) = 40.00$$

The screenshot shows a software dialog box titled "WinGAP - Background Information : RES IMP BASE DOLLA...". The dialog box is divided into several sections. On the left, there is a large, empty rectangular area. To the right of this area, there are two input fields labeled "Code:" and "Descrip:". Below these fields is a section titled "Values" which contains three input fields: "Lump Sum \$" with the value "0", "\$ / Square Feet" with the value "40.00", and "Cost Multiplier" with the value "0.00". At the bottom of the dialog box, there are six buttons: "Help", "Cancel", "New", "Delete", "Apply", and "OK".

The base dollar figure should exclude the value of items such as plumbing, fireplaces, heat, etc if the value of those items is to be added through schedule items.

Area Multipliers and Base Values

The table below depicts the dollar per square foot values that would result from various combinations of the total base area, base area, increment base, and the increment factor.

TBA	Base Area	Inc Base	Inc Factor	Area Mult	Base \$	Pt Cost	\$/SF	Tot Base Value
2500	1500	50	0.0050	0.900000	40.00	100.00	36.00	90,000
2500	1500	25	0.0050	0.800000	40.00	100.00	32.00	80,000
2500	1500	100	0.0050	0.950000	40.00	100.00	38.00	95,000
2500	1500	50	0.0035	0.930000	40.00	100.00	37.20	93,000
2500	1500	25	0.0035	0.860000	40.00	100.00	34.40	86,000
2500	1500	100	0.0035	0.965000	40.00	100.00	38.60	96,500
1750	1500	50	0.0050	0.975000	40.00	100.00	39.00	68,250
1750	1500	25	0.0050	0.950000	40.00	100.00	38.00	66,500
1750	1500	100	0.0050	0.987500	40.00	100.00	39.50	69,125
1750	1500	50	0.0035	0.982500	40.00	100.00	39.30	68,775
1750	1500	25	0.0035	0.965000	40.00	100.00	38.60	67,550
1750	1500	100	0.0035	0.991250	40.00	100.00	39.65	69,388
1000	1500	50	0.0050	1.050000	40.00	100.00	42.00	42,000
1000	1500	25	0.0050	1.100000	40.00	100.00	44.00	44,000
1000	1500	100	0.0050	1.025000	40.00	100.00	41.00	41,000
1000	1500	50	0.0035	1.035000	40.00	100.00	41.40	41,400
1000	1500	25	0.0035	1.070000	40.00	100.00	42.80	42,800
1000	1500	100	0.0035	1.017500	40.00	100.00	40.70	40,700
600	1500	50	0.0050	1.090000	40.00	100.00	43.60	26,160
600	1500	25	0.0050	1.180000	40.00	100.00	47.20	28,320
600	1500	100	0.0050	1.045000	40.00	100.00	41.80	25,080
600	1500	50	0.0035	1.063000	40.00	100.00	42.52	25,512
600	1500	25	0.0035	1.126000	40.00	100.00	45.04	27,024
600	1500	100	0.0035	1.031500	40.00	100.00	41.26	24,756
2500	2000	50	0.0050	0.950000	40.00	100.00	38.00	95,000
2500	2000	25	0.0050	0.900000	40.00	100.00	36.00	90,000
2500	2000	100	0.0050	0.975000	40.00	100.00	39.00	97,500
1750	2000	50	0.0050	1.025000	40.00	100.00	41.00	71,750
1750	2000	25	0.0050	1.050000	40.00	100.00	42.00	73,500
1750	2000	100	0.0050	1.012500	40.00	100.00	40.50	70,875
1000	2000	50	0.0050	1.100000	40.00	100.00	44.00	44,000
1000	2000	25	0.0050	1.200000	40.00	100.00	48.00	48,000
1000	2000	100	0.0050	1.050000	40.00	100.00	42.00	42,000
600	2000	50	0.0050	1.140000	40.00	100.00	45.60	27,360
600	2000	25	0.0050	1.280000	40.00	100.00	51.20	30,720
600	2000	100	0.0050	1.070000	40.00	100.00	42.80	25,680

The remaining *d/s/f* values for attics and basements on the screens below are representative of their respective categories just as the base *d/s/f* represents the base dollars per square foot. The same methodology of application as used for the base *d/s/f* can be used for these as well.

Attic Types

In the **Attic Type** screen image below, the Attic Type **Unfinished** (3rd in the list) is used to maintain the base *d/s/f* for attics. As many Attic Types as needed may be added by clicking New, completing the Descrip and \$/Square Feet info, and clicking Apply.

The Unfinished \$ / Square Feet represents the actual cost that has been determined for the base attic type and is used in the Square Foot method of calculation for attics. The other attic types are used only in the Descriptive Method of attic valuation.

The costs for the attic types are adjusted by the residential improvement point cost when saved in basectrl.dbf. The formula for adjusting the Unfin and other attic type costs is as follows:

$$\text{Attic Type } \$/\text{Square Feet} / (\text{res imp point cost} / 100)$$

If the appraiser determined that the cost for an unfinished attic was \$1.00 per square foot, the above formula would be applied in the following manner:

1. Unfin Attic basectrl.sqft = $1.00 / (100 / 100)$
2. Unfin Attic basectrl.sqft = $1.00 / 1$
3. Unfin Attic basectrl.sqft = 1.00

WinGAP - Background Information : RES IMP ATTIC TYPE

No Attic
Finished
Unfinished

Code: 003
Descrip: Unfinished

Values

Lump Sum \$ 0
\$ / Square Feet 2.53
Cost Multiplier 0.00

Help Cancel New Delete Apply OK

Basement Coverage

The **Basement Coverage** screen image below shows the basement coverage that represents the base *d/s/f* for an unfinished basement with the defined coverage. The fourth item in the list of Bsmt Coverage, Full, will always represent the base *d/s/f* for unfinished basements and is used in the Square Foot method of calculating basements. As many Bsmt Coverage types as needed may be added by clicking New, entering the Descrip and \$/ Square Feet information and clicking Apply to save.

The Full \$ / Square Feet represents the actual cost that has been determined for the base unfinished basement coverage. The formula for adjusting the Full Bsmt Coverage cost and other basement cost when saved in basectl.dbf is as follows:

$$\text{Basement coverage } \$/\text{Square Feet} / (\text{res imp point cost} / 100)$$

If the appraiser determined that the cost for a full basement (unfinished) was \$4.00 per square foot, the above formula would be applied in the following manner:

1. Full Bsmt basectl.sqft = $4.00 / (100 / 100)$
2. Full Bsmt basectl.sqft = $4.00 / 1$
3. Full Bsmt basectl.sqft = 4.00

WinGAP - Background Information : RES IMP BSMT COVER... x

None
Part
Half
Full

Code: 004
Descrip: Full

Values
Lump Sum \$ 0
\$/ Square Feet 6.20
Cost Multiplier 0.00

Help Cancel New Delete Apply OK

Heat Dollars

The **Heat Dollars** screen image below shows the schedule for keying the heat dollars. The Heat Dollars / Square Feet represents the actual cost that has been determined for the base heating type. The cost will be adjusted by the residential improvement point cost before being saved in basectrl.dbf. The formula for converting the base heat cost before it is saved is as follows:

$$\text{Base heat cost} / (\text{res imp point cost} / 100)$$

If the appraiser determined that the cost for the base heat was \$1.00 per square foot, the above formula would be applied in the following manner:

1. **heat basectrl.sqft = 1.00 / (100 / 100)**
2. **heat basectrl.sqft = 1.00 / 1**
3. **heat basectrl.sqft = 1.00**

WinGAP - Background Information : RES IMP HEAT DOLLA... x

Code:

Descrip:

Values

Lump Sum \$

\$ / Square Feet

Cost Multiplier

Help Cancel New Delete Apply OK

Determining Base Values (Total Dollars)

The internal WinGAP formulae for using the parameters associated with the above schedule items and calculating dollars per square foot are as follows:

1. **Area Mult = (((Base Area – TBA) / Inc Base) * Inc Fact) + 1.00 {round to 6 decimals}**
2. **Pts /SF = Area Mult * (basectrl.sqft / 100) {round to 2 decimals}**
3. **Base Dollars /SF = Pts per SF * Pt cost {round to 2 decimals}**
4. **Total Dollars = Dollars / SF * TBA**

The formulae that should be applied by the appraiser when using the \$/Square Feet figures on the above screens are as follows:

1. **Area Mult = (((Base Area – TBA) / Inc Base) * Inc Fact) + 1.00 {round to 6 decimals}**
2. **Dollars /SF = Area Mult * \$ per Square Feet {round to 2 decimals}**
3. **Total Dollars = Dollars / SF * TBA**

In the above set of formulae, the value of **TBA** represents the total base area of the house. In the case of attics and basements with the Square Foot Method of valuation selected, the **TBA** would be represented by the area of the attic or basement.

Using the base values above, an example of using the WinGAP internal formulae to determine the amount that the base heat has added to a structure of 1800 square feet is as follows:

1. **Area Mult = (((1500 – 1800) / 50) * .005) + 1.00 = .970000**
2. **Pts / SF = .970000 * (1.00 /100) = .0097**
3. **Dollars/SF = .0097 * 100 = .97**
4. **Total Dollars = .97 * 1800 = 1746**

Using the base values above, an example of applying the screen values to determine the amount that the base heat has added to a structure of 1800 square feet is as follows:

1. **Area Mult = (((1500 – 1800) / 50) * .005) + 1.00 = .970000**
2. **Dollars / SF = .970000 * 1.00 = .97**
3. **Total Dollars = .97 * 1800 = 1746**

Adjustments to Base Values

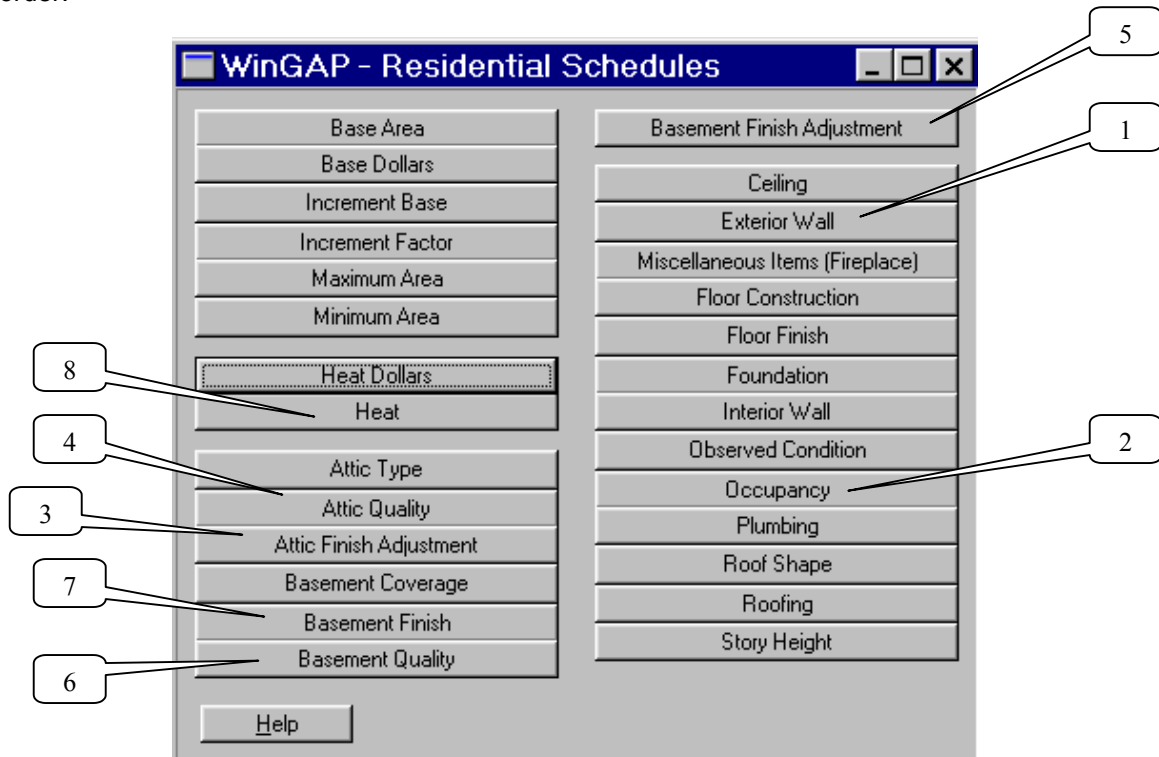
The above formula and schedule items represent base values. In arriving at Replacement Cost New (RCN), adjustments for exterior wall types, story height (see **NOTE** below), attic/basement finish and coverage, and heating types will be applied to the base values. All of the values are affected by the grade of the structure. Occupancy affects only Base Dollars. The following table shows the adjustments that are applied to each of the base values.

NOTE: Story Height in the example below refers to the Improvement Labels schedule, not the Story Height option on the Residential Schedules Menu, below, which is Descriptive only.

	Ext Wall	Sty Hght	Finish/Coverage	Heating Type	Grade	Occupancy
Base Dollars	•	•			•	•
Attic			•		•	
Basement			•		•	
Heat		•		•	•	

Each of the adjustments to the base dollar items with the exception of the grade is a schedule item that can be controlled by the appraiser. The grade is an adjustment that is assigned through data entry when field data is captured for each residential improvement.

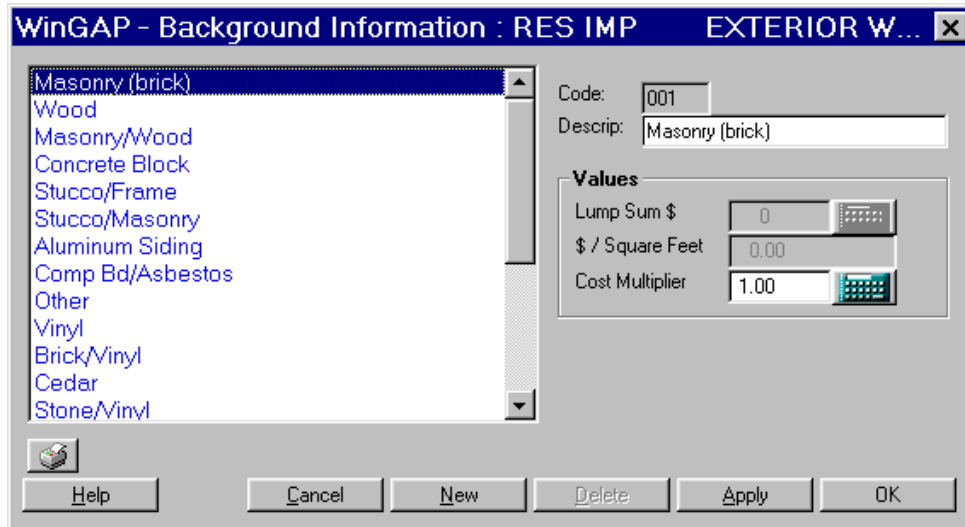
Adjustments for Exterior Wall types, Story Height, Finish and Coverage, and Heating Type can be accessed from the following menu options. The menu options will be covered in their numbered order.



The menu options **Exterior Wall (# 1)**, **Occupancy (# 2)**, and **Improvement Labels (discussed later)** contain factors that are used in the adjustment of Base Dollars. Both of the above mentioned schedules can be customized according to the needs of the county.

Exterior Wall (# 1)

The **Exterior Wall** option on the Residential Improvements menu provides the user with access to the exterior wall schedule. The schedule contains the various exterior wall types and their associated adjustments which are applied to the base dollars. The following screen shot provides an example of an Exterior Wall schedule.



New schedule items can be added by clicking New, completing the Descrip and Cost Multiplier data and clicking Apply to save. Existing items can be modified by selecting the item, making the necessary modifications and clicking Apply to save.

The Cost Multiplier is used to adjust the base points due to cost differences in the various exterior wall types. The exterior wall type of the improvements that were primarily used to derive the base dollars should be assigned a Cost Multiplier of 1.00. The formula for calculating an exterior wall Cost Multiplier is as follows:

Dollar per sf of house with an exterior wall type / Base Dollars

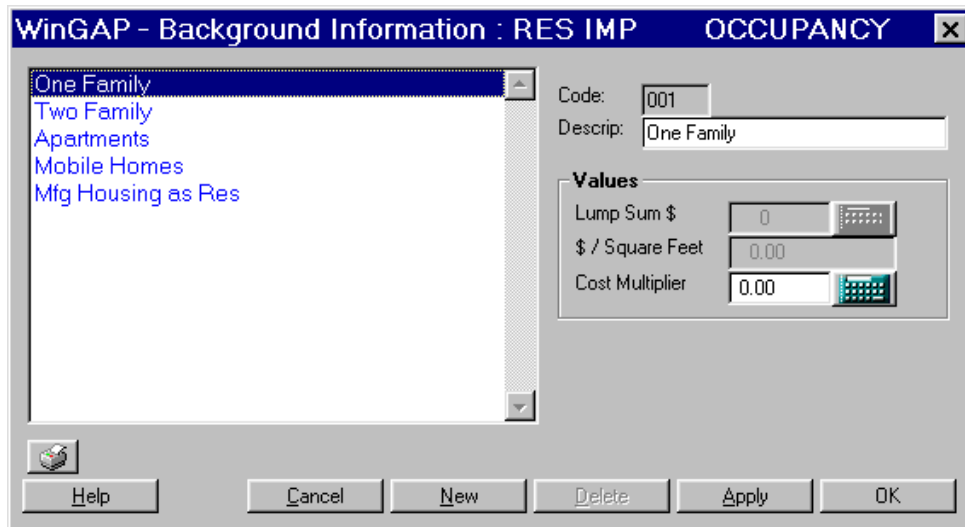
If wood exterior houses are selling for selling for \$38.00 per square foot, the calculation for the cost multiplier would look as follows:

$$\text{CM for wood} = 38 / 40$$

$$\text{CM for wood} = .95 \text{ (round to 2 decimals)}$$

Occupancy (# 2)

The **Occupancy** schedule, next page, provides a listing of the current Occupancy types. Occupancy cost multipliers, or factors, can be used to adjust Residential Improvement values for types of Occupancy.



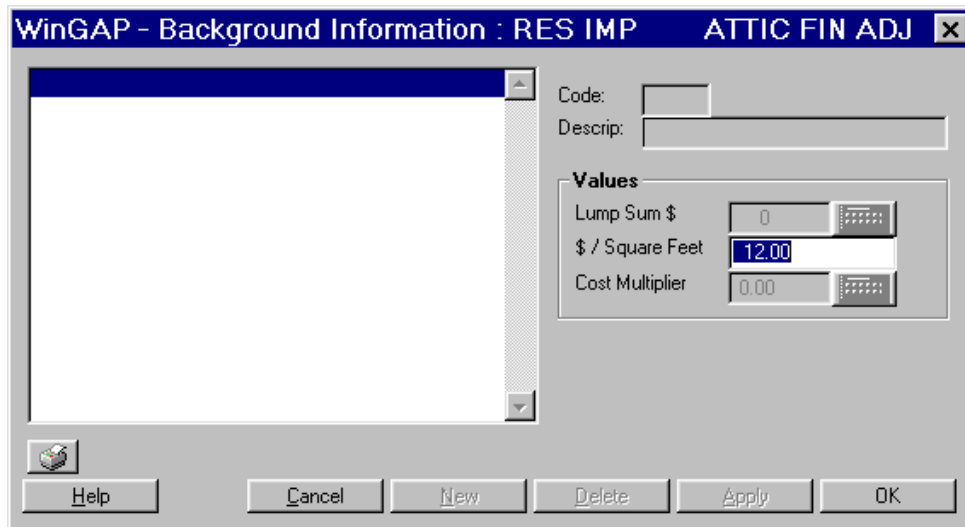
A new Occupancy type, such as Ranch, Split Level, etc., can be added to the Occupancy Schedule by clicking the "New" button, keying in the type in the **Description** field, and the county-derived cost multiplier in the **Cost Multiplier** field, and then clicking "Apply" or "OK". A maximum of 999 Occupancy types can be added to the schedule. The number in the Code field will be automatically assigned to the new Occupancy item by WinGAP and is not accessible to the user.

An **existing** Occupancy type, with the exception of Mobile Homes, can be edited by clicking on the desired type and editing the Description field. The position of the Mobile Homes Occupancy within the list cannot be changed. It is used by WinGAP to as a flag to determine if access to Manufactured Housing should be provided for Residential Improvement/Non-Prebilled Manufactured Homes. At the present time, it is not possible to **delete** an Occupancy type.

Attic Finish Adjustment (# 3)

The **Attic Finish Adjustment**, next page, is a dollar per square foot amount that is used to add value for attic finish when an attic is being valued under the Square Footage method.

If the appraiser determines that the cost to finish an attic is typically \$12.00 per square foot. The attic finish adjustment should be entered as 12.00 in the \$/Square Feet field.



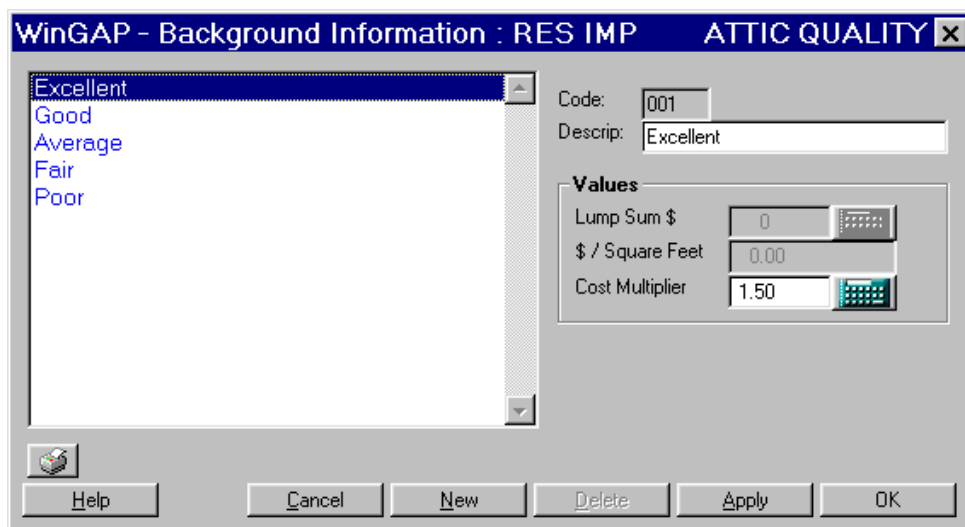
The attic finish adjustment is converted to points by WinGAP in the following manner:

Attic Finish Adj / res imp point cost

$$12.00 / 100 = .12$$

Attic Quality (# 4)

The **Attic Quality** factors are used to adjust the value of attics based on the quality of construction and finish. The factors entered in the field Cost Multiplier shown on the screen below are used in the Square Foot method of calculating attics.



Any number of Attic Quality categories can be added by clicking New, entering the Descrip and Cost Multiplier and clicking Apply to save. Existing categories can be edited by selecting the category, modifying the Descrip and/or Cost Multiplier and click Apply to save.

The Attic Quality Multipliers are applied in the following manner in the WinGAP calculation process:

Attic Value = (((Attic Fin % * Fin Adj) + (Attic \$/SF * Area Multiplier) * Attic area) * Attic quality multiplier) {rounded to 0 decimals}

Basement Finish Adjustment (# 5)

The **Basement Finish Adjustment** is a dollar per square foot contribution that is used to add value for basement finish when a basement is being valued under the Square Footage method.

If the appraiser determines that the cost to finish a basement is typically \$12.00 per square foot. The basement finish adjustment would be entered as 12.00 in the \$ / Square Feet field.

The screenshot shows a dialog box titled "WinGAP - Background Information : RES IMP BSMT FIN ADJ". It features a large empty text area on the left and a form on the right. The form includes fields for "Code:", "Descrip:", and a "Values" section. The "Values" section contains three fields: "Lump Sum \$" with a value of "0", "\$ / Square Feet" with a value of "12.00", and "Cost Multiplier" with a value of "0.00". At the bottom of the dialog box are buttons for "Help", "Cancel", "New", "Delete", "Apply", and "OK".

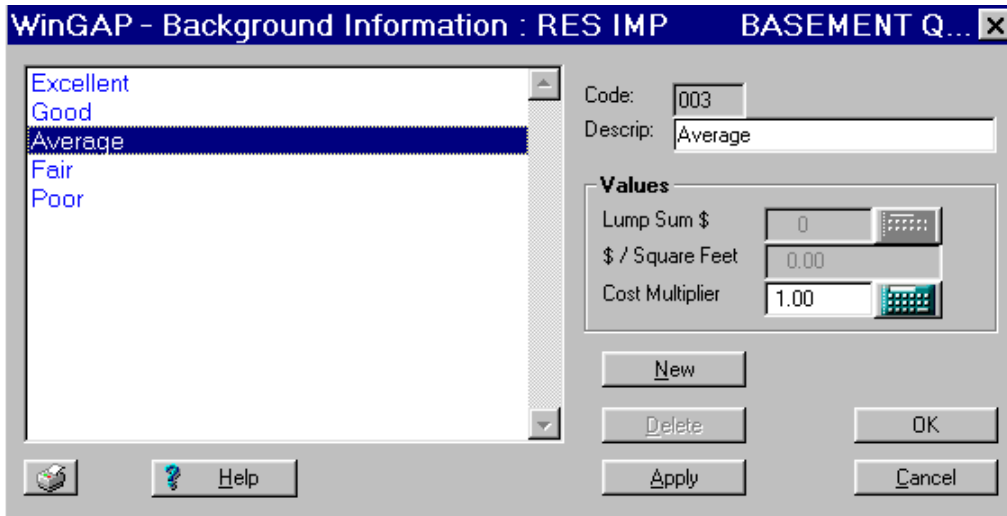
The basement finish adjustment can be converted into points and stored in basectrl.dbf with the formula below:

Basement Finish Adj / res imp point cost

$$12.00 / 100 = .12$$

Basement Quality (# 6)

The **Basement Quality** factors, next page are used to adjust the value of basements based on the quality of construction and finish. The factors entered in the field Cost Multiplier shown on the screen below are used in the Square Foot method of calculating basements.



Any number of Basement Quality categories can be added by clicking New, entering the Descrip and Cost Multiplier and clicking Apply to save. Existing categories can be edited by selecting the category, modifying the Descrip and/or Cost Multiplier and click Apply to save.

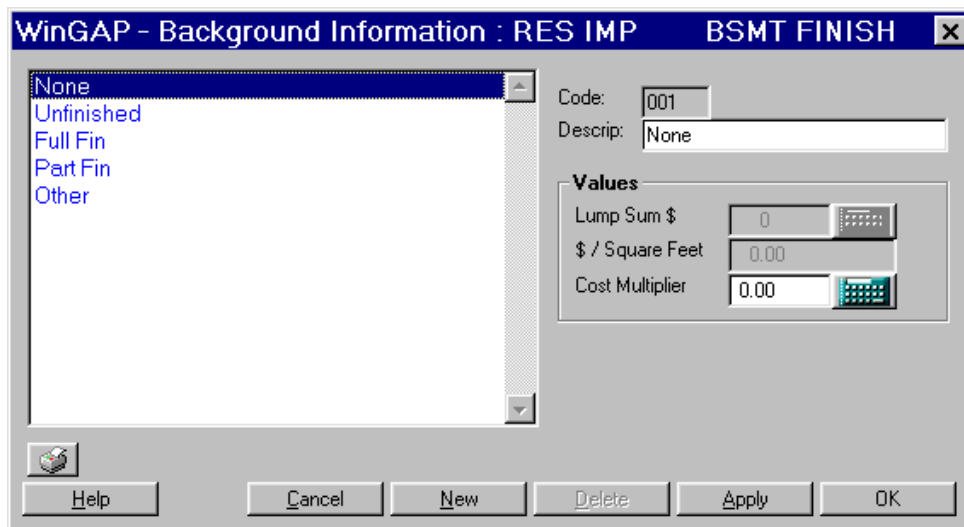
The Basement Quality multipliers are applied in the following manner in the WinGAP calculation process:

$$\text{Bsmt Value} = (((\text{Bsmt Fin \%} * \text{Fin Adj}) + (\text{Bsmt \$/SF} * \text{Area Mult})) * \text{Bsmt area}) * \text{Bsmt quality multiplier}) / 100 \text{ \{rounded to 0 decimals\}}$$

$$\text{Final Bsmt Value} = \text{Bsmt Value} * \text{Res Pt Cost}$$

Basement Finish (# 7)

The items in the **Basement Finish** schedule, next page, are used to adjust basement values for the extent of finish when the Descriptive method of valuation is used. The Cost Multiplier is an adjustment factor that is applied to the basement points.



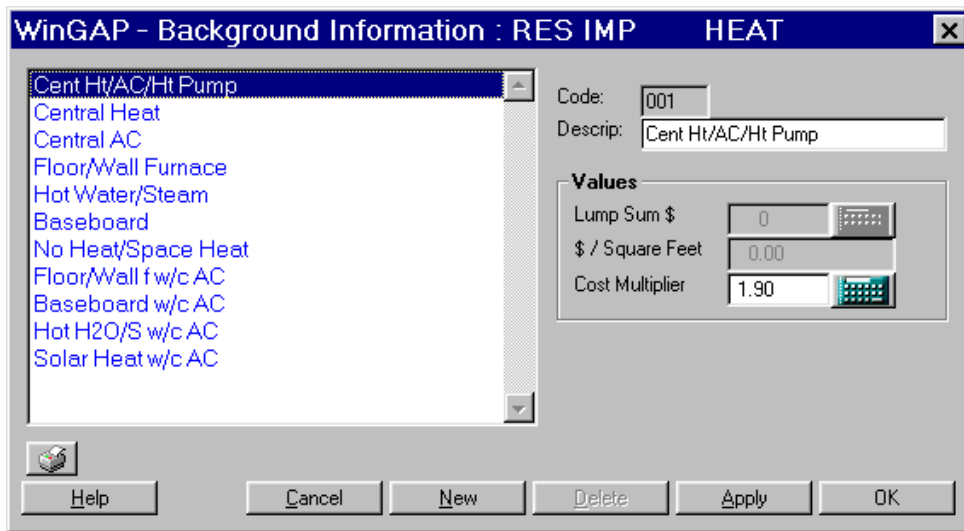
Any number of Bsmt Finish categories can be added by clicking New, entering the Descrip and Cost Multiplier and clicking Apply to save. Existing categories can be edited by selecting the category, modifying the Descrip and/or Cost Multiplier and click Apply to save.

The Bsmt Finish adjustments are applied in the following manner:

$$\text{Bsmt Points} = (\text{TBA} * \text{Bsmt Points per sq ft}) * \text{Fin Cost Mult} \text{ \{round to 0 decimals\}}$$

Heat (# 8)

The **Heat** schedule contains the various heating types and associated cost multipliers which are applied to the heat dollars. The screen shot below provides an example of a heat schedule.



The cost multipliers are determined on the basis of the cost of the heating type compared to the heat dollars. The formula for calculating the cost multipliers is as follows:

$$\text{Cost per sq ft for heat type} / \text{heat dollars}$$

If the cost of installing a floor/wall furnace is \$.50 per square foot, the cost multiplier would be calculated in the following manner:

$$\text{CM} = .50 / 1.00$$

$$\text{CM} = .50$$

The cost multiplier can be converted into actual dollars per square foot using the formula below:

$$\text{Cost multiplier} * \text{heat dollars}$$

Using the above formula the actual cost of Cent Heat/AC per square foot at the Base Area would be:

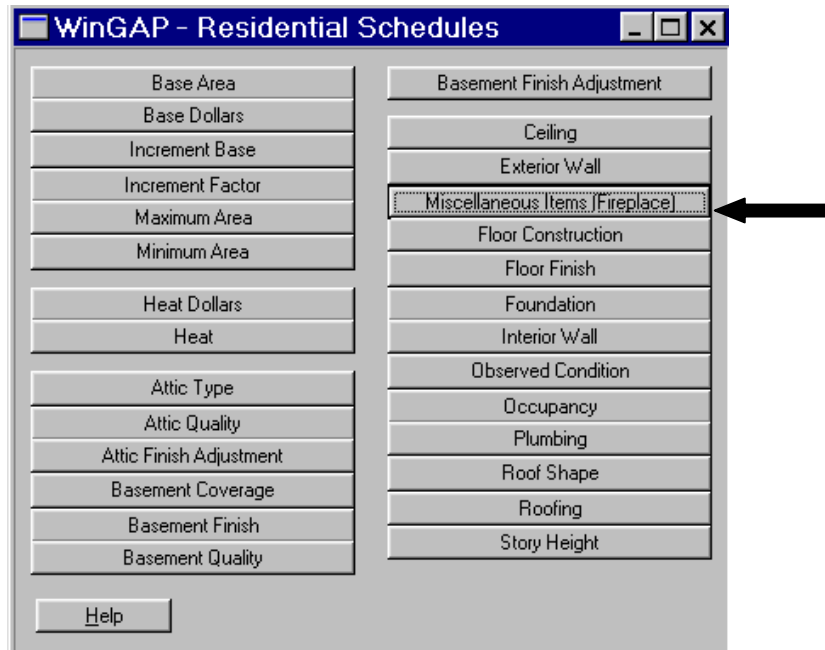
$$\text{Cent Heat/Ac Cost per sq ft} = 1.90 * 1.00$$

$$\text{Cent Heat/AC Cost per sq ft} = 1.90$$

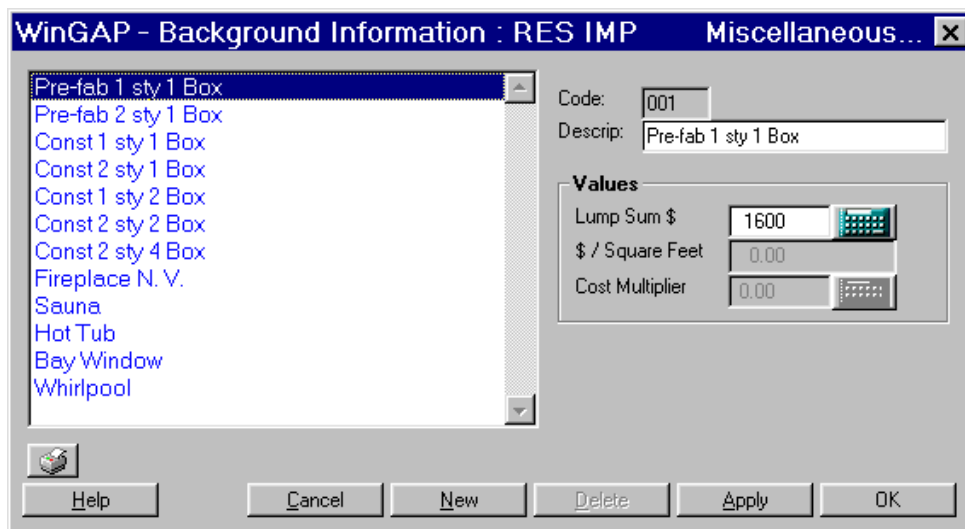
Any number of Heat categories can be added by clicking New, entering the Descrip and Cost Multiplier and clicking Apply to save. Existing categories can be edited by selecting the category, modifying the Descrip and/or Cost Multiplier and click Apply to save.

Miscellaneous Items (Fireplace)

The **Miscellaneous Items** schedule is designed to accommodate lump sum value items for residential improvements. The schedule can be accessed as shown in the screen shot below:



Examples of miscellaneous items are fireplaces, extraordinary plumbing such as whirlpools, saunas, etc, bay windows, etc. The following exemplifies a typical schedule for miscellaneous items.



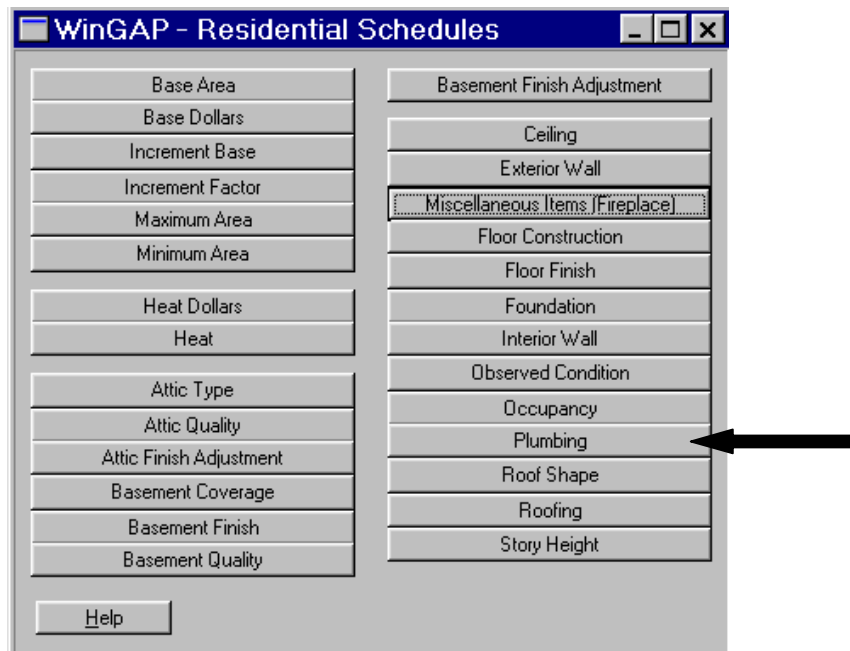
The dollar amount assigned to the miscellaneous item should be entered in the Lump Sum \$ field. The Lump Sum \$ value is saved in basectl.dbf after the following formula is applied:

$$\text{Lump Sum Dollar Value} = \text{Lump Sum \$} / \text{res imp pt cost}$$

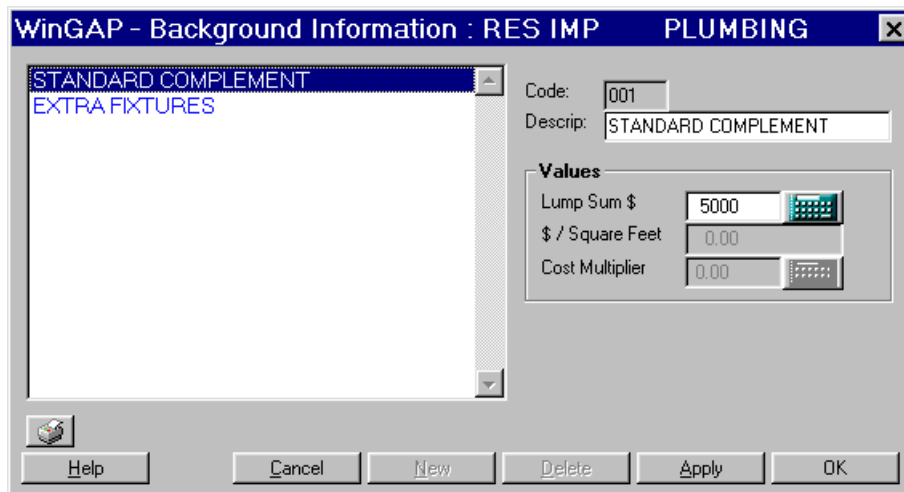
Any number of Miscellaneous Items can be added by clicking New, entering the Descrip and Lump Sum \$ and clicking Apply to save. Existing categories can be edited by selecting the category, modifying the Descrip and/or Lump Sum \$ and click Apply to save.

Plumbing

The **Plumbing** schedule for residential improvements can be accessed through the following menu item:



The following screen image depicts a typical plumbing schedule.



Only two items, Standard Complement and Extra Fixtures, are included in the plumbing schedule. The Standard Complement would include the number of fixtures that are associated with the standard plumbing complement found in the base house. The value of the Lump Sum \$ would reflect the total cost of the fixtures. Extra Fixtures would add value for any fixtures above the number included in the Standard Complement

The lump sum dollar contribution of each item should be entered in the Lump Sum \$ field. The amount entered is saved in basectrl.dbf after the following formula is applied:

Lump Sum \$ / res imp pt cost

Other Items

The schedules for the following items can be accessed in the same manner as the previously discussed residential improvement characteristics. Dollar per square foot adjustments or factors can be assigned to each of the items that are added. If no adjustments are to be made the appropriate value fields should be assigned a value of zero.

Ceiling
Floor Construction
Floor Finish
Foundation
Interior Wall
Roof Shape
Roofing

The following items should have selections added to them but carry no value contributions:

Observed Condition (**display only, no modifications can be made**)
Story Height

Improvement Labels (Cost Factors / Story Height Adjustments)

The **Improvement Labels** schedule contains adjustments for user defined story height labels. In addition to story height adjustments, the appraiser can also key factors that are used in the process of calculating total heated area. The schedule for Improvement Labels is accessed by going to **Tools >> Schedules / Tables >> Improvement Labels**. The Improvement Labels screen or table is shown below.

LABEL	DESCRIP	SQFT	COSTFACT	AREAFACT	LABELTYPE	BLDGTYPE	VALMETHOD
0.5s	Half Story	0.000000	0.5000	0.5000	Interior	Residential	0
1.0s	1.0s	0.100000	1.0000	1.0000	Primary	Residential	0
1.5	1.5	0.000000	1.5000	1.5000	Primary	Residential	0
1.5s	1.5s	0.100000	1.0000	1.5000	Primary	Residential	0
1st	1st	0.000000	1.0000	1.0000	Primary	Residential	0

Label: 1.0s
 Description: 1.0s
 Label Type: Primary
 Cost / SQFT: 10.000
 Cost Factor: 1.0000
 Area Factor: 1.0000

Building Type:
 RES
 COM
 MH

Buttons: Help, Cancel, New, Delete, Apply, OK

The Building Type must be set to RES before the user will have access to the residential labels. A discussion of each of the fields on this screen follows:

- ❑ Label – The label is a 4 position user defined field. Almost any combination of letters and numbers can be used to create labels. The only exceptions are commas and semicolons; neither of which should be used in defining a label.
- ❑ Description – The description is also a user defined field that better defines the associated label. The description should be clear and precise enabling the user to clearly identify which label is appropriate to assign to a polygon when sketching takes place.
- ❑ Label Type – The label type is a drop down list of the 5 options that are available for selection. The available label types are:
 - Addition – identified as a double black line
 - Appendage – identified as a solid blue line
 - Interior – identified as a broken green line
 - Primary – identified as a solid red line
 - Upper – identified as a broken purple line

Interior, Primary, and Upper are the three label types that are assigned story height (cost) factors which are used in the adjustment of the base dollars. Interior and Upper label types are often referred to as “upper level” labels since they are normally used to define sketches that represent an upper level footprint. Primary labels are generally assigned to lower level footprints. Primary, Interior, and Upper labels contribute to the accumulation of heated area. The label type Addition, also, contributes to the sum of the heated area.

However, only Primary and Upper label types contribute square footage to the Total Base Area of the improvement which in turn is used in the calculation of the area multiplier.

- Cost / SQFT – contains the cost per square foot for Addition and Appendage label types.
- Cost Factor – The story height adjustment for Interior and Primary label types. Other label types should be assigned a cost factor of 1.00. The cost factor should depict the difference in value that is attributable to the label and associated construction. For example, if a study of the residential improvement market indicates that 1500 sq ft one story homes are selling for \$40 per square foot, the calculation of the cost factor would be as follows:

Cost factor = residual improvement sales price per sf / base dollars

Cost factor = 40 / 40

Cost factor = 1.00

Should a comparable two story house with 1500 sq ft on the ground floor sell for \$72 / sf of ground floor area (108,000 residual imp sales price) with a Primary label type of 2st, the cost factor for the 2st label would be calculated as follows:

Cost factor = 72 / 40

Cost factor = 1.80

If the appraiser desires to calculate a cost factor for the same 2 story house but for an Interior label 2nd, the following series of calculations would be made:

1. the value of the ground floor area would be determined:

$$\text{grnd flr area} * \text{base } \$/\text{sf} = 40 * 1500 = 60,000$$

2. the value of the ground floor area would be subtracted from the residual improvement selling price of the improvement resulting in the value of upper level:

$$\text{upper level} = \text{res imp selling price} - \text{grnd flr value} = 108,000 - 60,000 = 48,000$$

3. the upper level sales price is divided by the upper level area resulting in the upper level \$/sf:

$$\text{upper level } \$/\text{sf} = \text{upper level sp} / \text{upper level sf} = 48,000 / 1500 = 32.00$$

4. upper level \$/sf is divided by the actual dollar per sf value resulting in the cost factor for the upper level:

$$\text{cost factor} = \text{upper level } \$ \text{ per sf} / \text{dollar per sf} = 32 / 40 = .80$$

- Area Factor – The adjustment that is made to the square footage of a polygon or sketched area. The resulting adjusted square footage is then added to the total heated area for label types of primary, interior and addition.

A story height level of 1.0 would more than likely be assigned an area factor of 1.00. A 1.5 story label would perhaps have an area factor of 1.50. An interior label of 2nd designed to accommodate a second floor upper level would also carry an area factor of 1.00. A 2st Primary label that was used to define a two story polygon would be assigned

an area factor of 2.00 to account for the upper level since the label would be attached to the ground floor footprint.

New Labels may be added to the list by:

1. Clicking New
2. Completing the information required in each field
3. clicking Apply to save

Labels can be edited by:

1. Selecting the label in the list box
2. Modifying the fields where data should be changed
3. Clicking Apply to save

Improvement Labels (Appendages / Additions)

The **Improvement Labels** schedule also contains adjustments for user defined appendage and addition sketching labels. The Improvement Labels screen or table is shown below.

LABEL	DESCRIP	SQFT	COSTFACT	AREAFACT	LABELTYPE	BLDGTYPE	VALMETHOD
Gar2	Gar2	0.265700	1.0000	1.0000	Appendage	Residential	0
Gar4	Gar4	0.265700	1.0000	1.0000	Appendage	Residential	0
OP	Open Porch	0.227700	1.0000	1.0000	Appendage	Residential	0
OP1	OP1	0.227700	1.0000	1.0000	Appendage	Residential	0
OP2	OP2	0.227700	1.0000	1.0000	Appendage	Residential	0

Label	<input type="text" value="OP"/>	Building Type
Description	<input type="text" value="Open Porch"/>	<input checked="" type="radio"/> RES
Label Type	<input type="text" value="Appendage"/>	<input type="radio"/> COM
Cost / SQFT	<input type="text" value="22.770"/>	<input type="radio"/> MH
Cost Factor	<input type="text" value="1.0000"/>	
Area Factor	<input type="text" value="1.0000"/>	

Buttons: Help, Cancel, New, Delete, Apply, OK

The Building Type must be set to RES before the user will have access to the residential labels. A discussion of each of the fields on this screen follows:

- ❑ Label – The label is a 4 position user defined field. Almost any combination of letters and numbers can be used to create labels. The only exceptions are commas and semicolons; neither of which should be used in defining a label.
- ❑ Description – The description is also a user defined field that better describes the associated label. The description should be clear and precise enabling the user to clearly identify which label is appropriate to assign to a polygon when sketching takes place.

- Label Type – The label type is a drop down list of the 5 options that are available for selection. The available label types are:
 - Addition – identified as a double black line
 - Appendage – identified as a solid blue line
 - Interior – identified as a broken green line
 - Primary – identified as a solid red line
 - Upper – identified as a broken purple line

Addition and **Appendage** are the two label types that are used for areas that are outside of the primary living areas. Areas labeled with Addition labels are added into the heated area of the residential improvement. Areas labeled with Appendage labels are not part of the heated area

- Cost / SQFT – The Cost / SQFT is the cost of the addition or appendage. If the appraiser determines that the cost of an open porch is 14.00 per square foot, the value keyed in the Cost / SQFT field should be 14.00. The cost is saved in the implabel.dbf after the following formula is applied

Cost / SQFT = Cost of item / res imp pt cost

Cost / SQFT = 14.00 / 100 = .1400 {rounded to 4 decimals}

- Cost Factor – The Cost Factor must have a value greater than 0.00 and should be set at 1.00 for Addition and Appendage labels. This is due to the fact that the value contribution of the schedule item is found in the Cost / SQFT. An entry other than 1.00 WILL have a direct impact on the appendage/addition value.
- Area Factor – The Area Factor must have a value greater than 0.00 and should be set to 1.00 for Appendages. Additions with a story height other than 1.0 may require an adjustment other than 1.00. In the case of Additions, the factor is applied to the square footage of a polygon or sketched area. The resulting adjusted square footage is then added to the total heated area.

New Labels may be added to the list by:

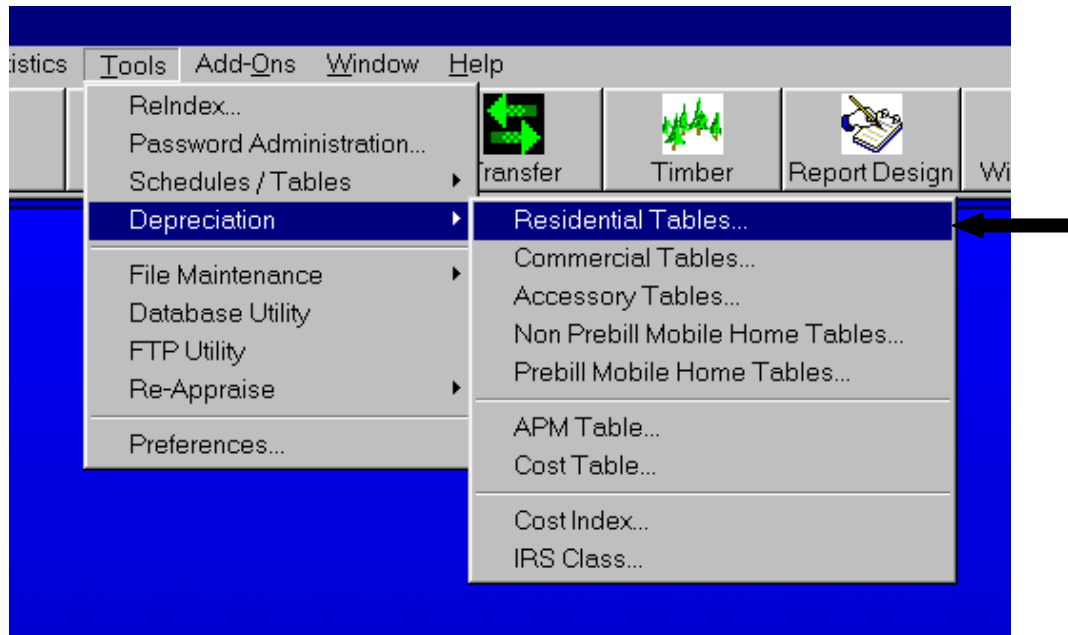
1. Clicking New
2. Completing the information required in each field
3. Clicking Apply to save

Labels can be edited by:

1. Selecting the label in the list box
2. Modifying the fields where data should be changed
3. Clicking Apply to save

Physical Depreciation

The residential improvement physical depreciation tables are found on the **Tools >> Depreciation >> Residential Tables** menu option.



Selecting the **Residential Tables** option would produce the depreciation table shown on the following page. The determination of depreciation is based on the age, grade or quality, and condition. The user can create a table as extensive and complex as needed by combining virtually unlimited grades, age increments and the five conditions, excellent, good, average, fair, and poor. Or the user may create a very basic and simple depreciation scheme if that is all that is desired.

The schedules on the following page show a depreciation table that is setup with grade ranges of 60 to 84, 85 to 109, 110 to 134, 135 to 159, 160 to 184, 185 to 999, age increments beginning at 1 extending to 100, and using all five conditions, Ex, Gd, Av, Fr, Pr. The fields titled 5, 10, 15, 20, etc, in the Depreciation Factor section of the table are used for commercial and manufactured housing. No entries should be made in those fields for residential improvements.

WinGAP - Depreciation - Residential

Grade-Frame-Age	Grade-Frame-Age	Grade-Frame-Age
060-A- 1	060-A- 20	060-A- 39
060-A- 2	060-A- 21	060-A- 40
060-A- 3	060-A- 22	060-A- 41
060-A- 4	060-A- 23	060-A- 42
060-A- 5	060-A- 24	060-A- 43
060-A- 6	060-A- 25	060-A- 44
060-A- 7	060-A- 26	060-A- 45
060-A- 8	060-A- 27	060-A- 46
060-A- 9	060-A- 28	060-A- 47
060-A- 10	060-A- 29	060-A- 48
060-A- 11	060-A- 30	060-A- 49
060-A- 12	060-A- 31	060-A- 50
060-A- 13	060-A- 32	060-A- 51
060-A- 14	060-A- 33	060-A- 52
060-A- 15	060-A- 34	060-A- 53
060-A- 16	060-A- 35	060-A- 54
060-A- 17	060-A- 36	060-A- 55
060-A- 18	060-A- 37	060-A- 56
060-A- 19	060-A- 38	060-A- 57

Depreciation Group

Grade:

Frame:

Age:

Depreciation Factors

Ex:	Gd:	Av:	Fr:	Pr:
<input type="text" value="0.97"/>	<input type="text" value="0.96"/>	<input type="text" value="0.95"/>	<input type="text" value="0.93"/>	<input type="text" value="0.89"/>

WinGAP - Depreciation - Residential

Grade-Frame-Age	Grade-Frame-Age	Grade-Frame-Age
060-A- 77	060-A- 96	085-A- 15
060-A- 78	060-A- 97	085-A- 16
060-A- 79	060-A- 98	085-A- 17
060-A- 80	060-A- 99	085-A- 18
060-A- 81	060-A-100	085-A- 19
060-A- 82	085-A- 1	085-A- 20
060-A- 83	085-A- 2	085-A- 21
060-A- 84	085-A- 3	085-A- 22
060-A- 85	085-A- 4	085-A- 23
060-A- 86	085-A- 5	085-A- 24
060-A- 87	085-A- 6	085-A- 25
060-A- 88	085-A- 7	085-A- 26
060-A- 89	085-A- 8	085-A- 27
060-A- 90	085-A- 9	085-A- 28
060-A- 91	085-A- 10	085-A- 29
060-A- 92	085-A- 11	085-A- 30
060-A- 93	085-A- 12	085-A- 31
060-A- 94	085-A- 13	085-A- 32
060-A- 95	085-A- 14	085-A- 33

Depreciation Group

Grade:

Frame:

Age:

Depreciation Factors

Ex:	Gd:	Av:	Fr:	Pr:
<input type="text" value="0.99"/>	<input type="text" value="0.98"/>	<input type="text" value="0.97"/>	<input type="text" value="0.95"/>	<input type="text" value="0.91"/>

If the grade of the improvement does not match a grade in the table, the next lowest grade is chosen. If no lower grade level exists in the table, the factors associated with the lowest grade level are used. For example, if the depreciation table contained grade increments of 60 and 85, and the grade of the improvement was 70, the depreciation amounts for grade 60 would be used. If the improvement was assigned a grade of 40, the 60 grade level would be used since 60 is the lowest grade level in the table. If a grade assigned to an improvement exceeds the maximum grade in the table, the max table grade is used in determining the improvement's depreciation.

However, if the age of an improvement falls within an age level range, the following interpolation routine is used to calculate the depreciation. The steps and formulae for interpolating residential improvement depreciation can be found below.

1. **Depr Increment = abs(Depr from Lower Age Level – Depr from Higher Age Level)**
2. **Inc Factor = Depr Inc / abs(Higher Age Level – Lower Age Level) {rnd to 2 dec}**
3. **Depr Adj = (Act Age – Lower Age Level) * Inc Factor {rnd to 2 dec}**
4. **Calc Dep = Depr from Lower Age Level – Depr Adj**

Following is an example of interpolating depreciation using a 60 grade house with an age of 7 and a depreciation table with a 5 year age level with depreciation of 95 and a 10 year age level with depreciation of 82.

Age	Depr Factor
5	.95
10	.82

$$\begin{aligned}
 \text{Dep Increment} &= .95 - .82 = .13 \\
 \text{Inc Factor} &= .13 / \text{abs}(10 - 5) = .13 / 5 = .03 \text{ \{round to 2 dec\}} \\
 \text{Depr Adj} &= (7 - 5) * .03 = 2 * .03 = .06 \text{ \{round to 2 dec\}} \\
 \text{Calc Dep} &= .95 - .06 = .89
 \end{aligned}$$

New entries are made to the depreciation table by clicking New, entering the Grade, Age and Depreciation Factors, and clicking Apply to save.

Existing information can be modified by selecting the appropriate grade-age combination from the list, modifying the data and clicking Apply to save.

Depreciation Table entries can be removed by selecting the grade-age combination from the list and clicking Delete.

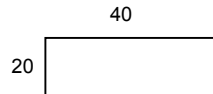
Residential Improvement Manual Calculations

Though the process of calculating the value of a residential improvement is handled very quickly by WinGAP, there are a number of steps and associated formulae involved in the procedure. An understanding of the procedure and the use of the schedules discussed in Section 2 should increase the awareness of the appraiser as to the impact of modifications both to the house or the schedules. Incorporated into the following worksheet are the steps and formulae used in the calculation of a residential improvement. Another copy of the worksheet can be found in the section of the manual titled **Appendix**.

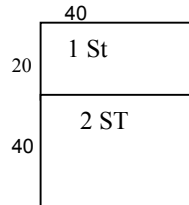
Residential improvements in WinGAP are calculated on a point contribution system that is converted to dollars by a locally generated point cost value. Point contributions for each component of the house are found in Preferences, Residential Improvement schedules, and Improvement Labels. Also found in Preferences, Residential Improvement schedules, and Improvement Labels are factors used to modify points when necessary. The calculation formulae in this section contain the basic steps to manually generate points for a residence. Following is an explanation of the steps and definitions of terms.

TOTAL BASE AREA - The total base area is the sum of the square footage of all primary sections. The square footage is **NOT** adjusted by the Area Factor. If a house has two stories, only the first story area is used. If a house is part one story and part two story, the sum of the ground floor areas from each part is used as TOTAL BASE AREA (TBA).

Examples of calculating the TBA can be found below:



The TBA in the example above would be $20 * 40$ or 800 square feet.



The TBA in the above sketch would be calculated as follows: $(20 * 40) + (40 * 40) = 2400$

Following is the internal calculation process that WinGAP follows when determining the fair market value of a residential improvement.

1. Determining the TOTAL BASE AREA is the first step in the manual calculation process.
2. **BASE POINTS** - calculating the base points is the second step in the calculation procedure. This process contains several steps within itself. Some of the procedures discussed here can also be used in other areas.

Determining the Adjusted Points per Square Foot (Adj PSF), which can be plugged into number one (1) on the worksheet, is the initial step. This is accomplished by using a formula in conjunction with the Base Area, Increment Base, Increment Factor, Base Dollars and Exterior Wall Cost Multiplier. The formulae are: (See Q and R on worksheet).

The adjusted PSF is then multiplied by the Cost (Story Height) Factor (2) and the Square Footage (3) of the ground floor area. This is done independently for each story height section. Line results are placed in Base Points (4) and rounded to whole points. If more than one story height section is involved, the Base Points (4) are added together giving the Total Base Points (5).

3. **HEAT/AC POINTS** - Heat PSF (7) is calculated by using formula "S" on the back of the worksheet. The AREA MULTIPLIER calculated in "Q" is used in "S." Heat Adj comes from the HEAT schedule's Cost Multiplier.

After calculating Heat PSF (7), the Sq Ft (6) and Sty Ht Adj (8) are entered on the proper Sty line. Both would be the same as those used in "A." Sq Ft (6) times Heat PSF (7) times Sty Ht Adj (8) produces Heat/AC Pts (9). The Heat/AC Pts (9) are summed into Total Heat Pts (10).

4. **BASEMENT/ATTIC POINTS** - Basement and attic points are calculated by two different methods. One is by descriptive terms (Option 1); the other is by using square foot and percent finish information (Option 2).

Using Option 1 or descriptive Method for basements, the Basement PSF (Formula T) must be calculated using the AREA MULTIPLIER from Q and the appropriate \$ / Square Feet from the Basement Coverage schedule. The selection of the \$ / Square Feet depends upon the descriptive information entered for the basement of the house. The results are carried to six decimal positions and used in Bsmt Pts/SF.

Bsmt PSF (12) is then multiplied by TBA (11) giving Bsmt Pts (13) which is rounded to whole points. Bsmt Pts (13) is multiplied by Fin Adj (14) giving the Adj Bsmt Pts (15). Fin Adj (14) comes from the Basement Finish schedule.

Under the Descriptive Option (Option 1 for attics, the Attic PSF (22) is calculated using the same steps as the Bsmt PSF except the appropriate attic \$ / Square Feet from the Attic Type schedule is used. It then is multiplied by The TBA (21), rounded to whole points, and placed in Attic Points (23).

With the Square Foot Method or Option 2, the Full Bsmt \$ / Square Feet from Basement Coverage and the Attic Unfin \$ / Square Feet from Attic Type are used to calculate the respective PSF's (see formula "U"). The PSF is then added to the Bsmt/Attic Fin PSF (17/25) which has been adjusted by the Bsmt/Attic % Fin (16/24). Bsmt/Attic Finish Adjustment \$ / Square Feet values are found in Basement Finish Adjustment and Attic Finish Adjustment schedules, respectively. Bsmt/Attic % Fin comes from information provided with the house.

After the above procedure is completed, the result is multiplied by the Bsmt/Attic Area (19/27) giving the Bsmt/Attic Pts (20/28) which are rounded to whole points.

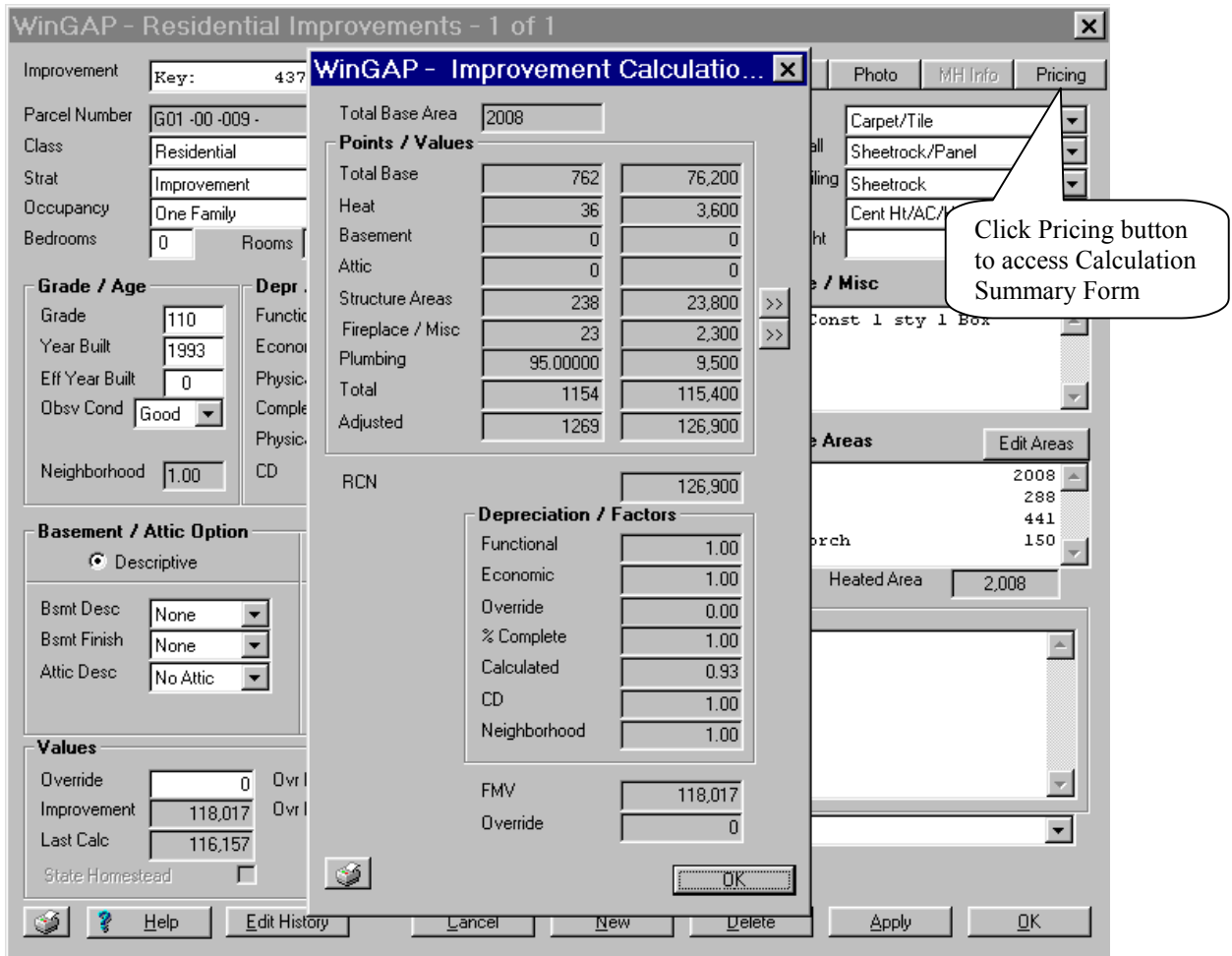
5. **APPENDAGES (Additions, porches, etc.)** - The points for appendages are calculated by multiplying their Area (29) by the PSF (30) which is found in the Improvement Labels' Cost / SQFT field. The adjustment for Stry Ht (31) comes from the Cost Factor found in the Improvement Labels schedule. The results are placed in Appendage Pts (32).

6. **MISC ITEMS** - The Pts/unit (34) for miscellaneous lump sum items are found in the Miscellaneous Items (Fireplaces) schedule's Lump Sum \$ field. The points are multiplied by the # of MI (33) giving Points (35). The Points (35) are summed and placed in Misc Items Pts (36).

7. **PLUMBING** - Plumbing points are calculated by multiplying the # Std Comp (37) times the Pts/Comp (38) found in the Standard Complement Lump Sum \$ field in the Plumbing schedule. The result of the previous calculation is added to the product of the # X-Fix (39) times the Pts/Fix (40) which is also found in the Extra Fixture Lump Sum \$ field found on the Plumbing Schedule. The points are stored in Plumbing Pts (41).

All points are then totaled and placed in Total Pts (42). Total Pts (42) are then adjusted by the Grade (43) and rounded to whole points. The Total Adj Pts (44) are then converted to dollars by using the residential point cost value or Pt Val (45). This gives the Replacement Cost (46) in whole dollars which is adjusted for depreciation, obsolescence, cost & design, and neighborhood producing FMV (56).

The points and value calculated using the above steps and following worksheets should mirror the points displayed on the **WinGAP Improvement Calculation Summary** screen. The screen can be accessed from the **Residential Improvements** screen by clicking the button labeled Pricing, as shown below.



RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

A. Base Pts							
Sty Ht	1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)
		X		X		=	+
		X		X		=	+
		X		X		=	=
							5. Total Base Pts (0)
B. Heat Pts							
Sty Ht	6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)
		X		X		=	+
		X		X		=	+
		X		X		=	=
							10. Total Heat Pts (0)
C. Bsmt Pts							
Opt = Desc							
11. TBA	12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)
X		=	X			=	
Opt = Sq Ft							
16. Bsmt % Fin	17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)
X	()	+	()	X		=	
D. Attic Pts							
Opt = Desc							
21. TBA	22. Attic PSF						23. Attic Pts (0)
X							=
Opt = Sq Ft							
24. Attic % Fin	25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)
X	()	+	()	X		=	
	29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)
E.		X		X			=
F.		X		X			=
G.		X		X			=
H.		X		X			=
I.		X		X			=
J.		X		X			=
K.		X		X			=
L.		X		X			=
M. Misc Items							
	33. # MI		34. Pts/Unit		35. Points		36. Misc Items Pts (0)
		X		=		+	
		X				+	=
O. Plumbing							
	37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix
	()	X	()	+	()	X	() =
P. FMV							
	42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value
		X		=		X	=
47. RCN	48. Phy%		49. Func%		50. Econ%		51. Comp%
X		X		X		X	=
53. Adj RCN	54. CD		55. Neighbd				56. FMV (0)
X		X					

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (6) **
((	-	)	/	)	X	)	+	1.000	=
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Fac * Occupancy Fac	Adj PSF (6)
(	X	)	/	100	=		X		=
Adds (Found, Roof, Flr, etc) Pts/SF are added to Adj PSF above									
Area Mult		Add D/SF				Pts/SF (6)			+
(	X	)	/	100					+
(	X	)	/	100					+
(	X	)	/	100					+
(	X	)	/	100					+
(	X	)	/	100					+
									Total Adj PSF
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(	X		X	)	/	100			=
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X		/	100					=
Area Mult		Attic D/SF							Attic PSF(6)
	X		/	100					=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(	X	)	/	100					=

** The Area Multiplier for basements and attics is rounded to 3 decimal places.

Below are the steps for calculating the fair market value of a residential improvement using the values and adjustments displayed on the schedule screens:

1. $\text{Adj DSF1} = \text{Area Multiplier} * \text{Base Dollars}$ [round 6 decimals]
2. $\text{Adj DSF2} = \text{Adj DSF1} * \text{Ext Wall Fact} * \text{Occupancy Fact}$ [round 6 decimals]
3. $\text{Sum Adds} = (\text{AM} * \text{Foundation}) + (\text{AM} * \text{Roof}) + (\text{AM} * \text{RoofShape}) + (\text{AM} * \text{FlrCons})$
 $+ (\text{AM} * \text{FlrFin}) + (\text{AM} * \text{IntWall}) + (\text{AM} * \text{Ceiling})$
4. $\text{Total DSF} = \text{Adj DSF2} + \text{SumAdds}$
5. $\text{Base Value} = \text{TotalDSF} * \text{Area} * \text{Cost Factor}$ [round to 100]
6. $\text{Heat Value} = \text{Heat DSF} * \text{AM} * \text{Heat Adj} * \text{Cost Factor} * \text{Area}$ [round to 100]
7. $\text{Bsmt Value} = (((\text{Bsmt Fin \%} * \text{Fin Adj}) + (\text{Bsmt \$/SF} * \text{AM})) * \text{Bsmt Area}) * \text{Bsmt Qual Mult}$ [round to 100]
8. $\text{Attic Value} = (((\text{Attic Fin \%} * \text{Fin Adj}) + (\text{Attic \$/SF} * \text{AM})) * \text{Attic Area}) * \text{Attic Qual Mult}$ [round to 100]
9. $\text{Appendage Value} = \text{Appen DSF} * \text{Area} * \text{Cost Factor}$ [round to 100] {sum value of all appendages}
10. $\text{Misc Items Value} = \text{Misc Lump Sum Value} * \text{\# of Items}$ [round to 100] {sum value of all misc items}
11. $\text{Plumbing Value} = (\text{Std Comp Value} * \text{\# of Std Complements})$ [round to 100] + $(\text{Extra Fix Value} * \text{\# of Extra Fixtures})$ [round to 100]
12. $\text{RCN} = (\text{Base Value} + \text{Heat Value} + \text{Bsmt Value} + \text{Attic Value} + \text{Appendage Value} + \text{Misc Item Value} + \text{Plumbing Value}) * \text{Grade}$ [round to 1]
13. $\text{FMV} = \text{RCN} * \text{Phy Dep} * \text{Func} * \text{Neighborhood} * \text{Econ} * \text{Per Comp} * \text{CDU}$

WinGAP Manual Calculations - "Actual Dollars" Worksheet

Area Multiplier	Base Area	TBA	Inc Fact	Area Mult	Rnd			
Base	(((- /) + 1.000 =				2d			
Basement	(((- /) + 1.000 =				3d			
Attic	(((- /) + 1.000 =				3d			
Adj DSF1	Area Mult	Base Dollars		Adj DSF1				
	x			=	6d			
Adj DSF2	Adj DSF1	Ext Wall Fac	Occ Fact	Adj DSF2				
				=	6d			
Sum Adds	Area Mult	Add \$\$		Adj Adds				
Foundation	x			=	6d			
Roof	x			=	6d			
Roof Shape	x			=	6d			
Flr Cons	x			=	6d			
Flr Fin	x			=	6d			
Int Wall	x			=	6d			
Celing	x			=	6d			
Total Adds					6d			
Total DSF	Adj DSF2	Sum Adds		Total DSF	6d			
	+			=				
Base Value	Total DSF	Area	Sty Adj		Base Value			
Base 1	x	x			= 100			
Base 2	x	x			=			
Base 3	x	x			=			
Heat Value					Heat Value			
Base 1					= 100			
Base 2					=			
Base 3					=			
Bsmt Value	Bsmt Fin %	Fin Adj \$\$	Bsmt DSF	Area Mult	Bsmt Area	Qual Mult	Bsmt Value	
	(((x) + ((x))) x						= 100	
Attic Value	Attic Fin %	Fin Adj \$\$	Attic DSF	Area Mult	Attic Area	Qual Mult	Attic Value	
	(((x) + ((x))) x						= 100	
Append Value	Append DSF	Area	Sty Adj				Append	
App 1	x	x					= 100	
App 2	x	x					=	
App 3	x	x					=	
Misc Value	Lump Sum	# of Items					Misc	
Misc 1	x						= 100	
Misc 2	x						=	
Misc 3	x						=	
Plumbing	Std Comp \$	# of Std Comp					Plumbing	
	x						= 100	
	Extra Fix \$	# of Extra Fix						
	x						= 100	
Total Base								
RCN	Total Base	Grade					RCN	
	x						= 1	
FMV	RCN	Phy Dep	Func	Nbhd	Econ	Pct Comp	CDU	FMV
	x	x	x	x	x	x	x	=

Following is an example of the manual calculation of a residential improvement with the characteristics below and using the schedules in the Appendix:

Primary Area Labeled 1 st	1200 sf
Primary Area Labeled 2st	600 sf
Exterior Walls	Wood
Heating	Cent Heat/Air
Attic	600 sf
Attic % Finish	75
Open Porch	400 sf
Fireplace	1 Const 2 Story / 1 firebox
Plumbing	1 Std Comp / 5 Extra Fixtures
Grade	115
Year Built	1988
Condition	Good

1. Determining the TOTAL BASE AREA is the first step in the manual calculation process.

$$TBA = 1200 + 600 = 1800$$

2. **BASE POINTS** - calculating the base points is the second step in the calculation procedure. This process contains several steps within itself. Some of the procedures discussed here can be used in other areas also.

Determining the Adjusted Points per Square Foot (Adj PSF), which can be plugged into number one (1) on the worksheet, is the initial step. This is accomplished by using a formula in conjunction with the **Base Area, Increment Base, Increment Factor, Base Dollars and Exterior Wall Cost Multiplier**. The formulae are: (See Q and R on worksheet).

Q. Area Mult										
Base Area		TBA		Inc Base		Inc Fact				Area Mult (6)
(((1500	-	1800	/	50)	X	.005)	+	1.000	=	.970000
R. Adj Base Pts per SF										
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor		Adj PSF (6)
(.970000	X	40.00	/	100	=	.388000	X	.93	=	.360840

The adjusted PSF is then multiplied by the Cost (Story Height) Factor (2) and the Square Footage (3) of the ground floor area. This is done independently for each story height section. Line results are placed in Base Points (4) and rounded to whole points. If more than one story height section is involved, the Base Points (4) are added together giving the total Base Points (5).

A. Base Pts										
Sty Ht		1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)		
1.0st		.360840	X	1.00	X	1200	=	433	+	
2.0st		.360840	X	1.80	X	600	=	390	+	5. Total Base Pts (0)
			X		X		=		=	823

3. **HEAT/AC POINTS** - Heat PSF (7) is calculated by using formula "S" on the back of the worksheet. The AREA MULTIPLIER calculated in "Q" is used in "S." Heat Adj comes from the HEAT schedule's Cost Multiplier.

S. Heat Pts per SF										
Area Mult		Heat D/SF		Heat Adj						Heat PSF (6)
(.970000	X	.65	X	1.90	)	/	100		=	.011980

After calculating Heat PSF (7), the Sq Ft (6) and Cost Factor (8) are entered on the proper Sty line. Both would be the same as those used in "A." Sq Ft (6) times Heat PSF (7) times Cost Factor (8) produces Heat/AC Pts (9). The Heat/AC Pts (9) are summed into Total Heat Pts (10).

B. Heat Pts										
Sty Ht		6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)		
1.0st		1200	X	.011980	X	1.00	=	14	+	
1.0st		600	X	.011980	X	1.80	=	13	+	10. Total Heat Pts (0)
			X		X		=		=	27

4. BASEMENT/ATTIC POINTS - Basement and attic points are calculated by two different methods. One is by descriptive terms (Option 1); the other is by using square foot and percent finish information (Option 2).

Using Option 1 or descriptive Method for basements, the Basement PSF (Formula T) must be calculated using the AREA MULTIPLIER from Q and the appropriate \$ / Square Feet from the Basement Coverage schedule. The selection of the \$ / Square Feet depends upon the descriptive information entered for the basement of the house. The results are carried to six decimal positions and used in Bsmt Pts/SF.

Bsmt PSF (12) is then multiplied by TBA (11) giving Bsmt Pts (13) which is rounded to whole points. Bsmt Pts (13) is multiplied by Fin Adj (14) giving the Adj Bsmt Pts (15). Fin Adj (14) comes from the Basement Finish schedule.

Under the Descriptive Option (Option 1 for attics, the Attic PSF (22) is calculated using the same steps as the Bsmt PSF except the appropriate attic \$ / Square Feet from the Attic Type schedule is used. It then is multiplied by The TBA (21), rounded to whole points, and placed in Attic Points (23).

With the Square Foot Method or Option 2, the Full Bsmt \$ / Square Feet from Basement Coverage and the Attic Unfin \$ / Square Feet from Attic Type are used to calculate the respective PSF's (see formula "U"). The PSF is then added to the Bsmt/Attic Fin PSF (17/25) which has been adjusted by the Bsmt/Attic % Fin (16/24). Bsmt/Attic Finish Adjustment \$ / Square Feet values are found in Basement Finish Adjustment and Attic Finish Adjustment schedules, respectively. Bsmt/Attic % Fin comes from information provided with the house.

U. Bsmt/Attic Pts per SF (Sq Ft)											
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)		
((		)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)		
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)		
((1500)	/	50	X	.005)	+	1.000	=	1.09
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)		
(1.09	X	1.00)	/	100			=	.010900	

After the above procedure is completed, the result is multiplied by the Bsmt/Attic Area (19/27) giving the Bsmt/Attic Pts (20/28) which are rounded to whole points.

Opt = Sq Ft											
24. Attic % Fin		25. Attic Fin PSF		26. Attic PSF		27. Attic Area			28. Attic Pts (0)		
[(.75	X	.059)	+	.010900)]	X	600	=	33

5. **APPENDAGES (Additions, porches, etc.)** - The points for appendages are calculated by multiplying their Area (29) by the PSF (30) which is found in the Improvement Labels' Cost / SQFT field. The Cost Factor adjustment (31) comes from the Cost Factor found in the Improvement Labels schedule. The results are placed in Other Pts (32).

	29. Area		30. PSF		31. Sty Adj			32. Appendage Pts (0)
E. OP	400	X	.099	X	1.00		=	40

6. **MISC ITEMS** - The Pts/unit (34) for miscellaneous lump sum items are found in the Miscellaneous Items (Fireplaces) schedule's Lump Sum \$ field. The points are multiplied by the # of MI (33) giving Points (35). The Points (35) are summed and placed in Misc Items Pts (36).

M. Misc Items	33. # MI		34.Pts/Unit		35. Points			36. Misc Items Pts (0)
F/P	1	X	13	=	13	+		
		X				+	=	13

7. **PLUMBING** - Plumbing points are calculated by multiplying the # Std Comp (37) times the Pts/Comp (38) found in the Standard Complement Lump Sum \$ field in the Plumbing schedule. The result of the previous calculation is added to the product of the # X-Fix (39) times the Pts/Fix (40) which is also found in the Extra Fixture Lump Sum \$ field found on the Plumbing Schedule. The points are stored in Plumbing Pts (41).

O. Plumbing	37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix		41. Plumbing Pts (0)
	(1	X	22	)	+	( 5	X	4	) = 42

All points are then totaled and placed in Total Pts (42). Total Pts (42) are then adjusted by the Grade (43) and rounded to whole points. The Total Adj Pts (44) are then converted to dollars by using the residential point cost value or Pt Val (45). This gives the Replacement Cost (46) in whole dollars which is adjusted for depreciation, obsolescence, cost & design, and neighborhood producing FMV (56).

P. FMV	42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value		46. RCN (0)
	978	X	1.10	=	1076	X	200	=	215,200
47. RCN	48. Phy%		49. Func%		50. Econ%		51. Comp%		52. Adj RCN (6)
215,200	X	.87	X	1.00	X	1.00	X	1.00	= 187,224.000000
53. Adj RCN	54. CD		55. Neighd						56. FMV (0)
187,224.0000	X	1.00	X	1.00					187,224

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): 1800

A. Base Pts									
Sty Ht	1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)		
1.0st	.360840	X	1.00	X	1200	=	433	+	
2.0st	.360840	X	1.80	X	600	=	390	+	5. Total Base Pts (0)
		X		X		=		=	823
B. Heat Pts									
Sty Ht	6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)		
1.0st	1200	X	.023959	X	1.00	=	28	+	
1.0st	600	X	.023959	X	1.80	=	26	+	10. Total Heat Pts (0)
		X		X		=		=	54
C. Bsmt Pts									
Opt = Desc									
11. TBA	12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)		
	X	=		X		=			
Opt = Sq Ft									
16. Bsmt % Fin	17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)		
[(	X	)	+	)]	X		=		
D. Attic Pts									
Opt = Desc									
21. TBA	22. Attic PSF						23. Attic Pts (0)		
	X						=		
Opt = Sq Ft									
24. Attic % Fin	25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)		
[(	.75	X	.059	)	+	.010900	)]	X	600
									=
									33
	29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)		
E. OP	400	X	.099	X	1.00			=	40
F.		X		X				=	
G.		X		X				=	
H.		X		X				=	
I.		X		X				=	
J.		X		X				=	
K.		X		X				=	
L.		X		X				=	
M. Misc Items									
33. # MI			34. Pts/Unit		35. Points		36. Misc Items Pts (0)		
F/P	1	X	13	=	13	+		=	13
		X				+		=	
O. Plumbing									
37. # Std Comp			38. Pt/Cmp		39. # X-Fix		40. Pts/Fix		41. Plumbing Pts (0)
(	1	X	22	)	+	(	5	X	4
									=
									42
P. FMV									
42. Total Pts			43. Grade		44. Adj Pts (0)		45. Pt Value		46. RCN (0)
	1005	X	1.10	=	1106	X	100	=	110,600
47. RCN			49. Func%		50. Econ%		51. Comp%		52. Adj RCN (6)
110,600	X	.87	1.00	X	1.00	X	1.00	=	96,222.000000
53. Adj RCN			55. Neighd						56. FMV (0)
96,222.00000	X	1.00	1.00						96,222

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): 1800

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (2)
(((1500	-	1800	/	50)	X	.005)	+	1.000	= .970000
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor	Adj PSF (6)
(.970000	X	40.00	/	100	=	.388000	X	.93	= .360840
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(.970000	X	1.30	X	1.90)	/	100			= .023959
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X								=
Area Mult		Attic D/SF							Attic PSF(6)
	X								=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
(( (	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
(((1500	-	600)	/	50)	X	.005)	+	1.000	= 1.09
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(1.09	X	1.00)	/	100					= .010900

Residential Improvement Point Cost Study

A residential improvement point cost study is conducted whenever a county initially begins GAP operation or the sales ratio studies indicate that a change is needed in the residential valuation schedule. The Residential Improvement Point Cost can be found by going to the **Tools** menu and choosing **Preferences**. The screen that displays after the item is selected contains information about county addressing, residential valuation information, commercial improvement valuation info, etc. The *Residential Point Cost* can be found within the **Points/Base Costs** section of the screen.

The point cost for residential improvements is a county-created valuation index that is applied to the adjusted points for a residential improvement. The point cost is used on all residential improvements within the county. Adjustments for location are made with the neighborhood influences on a parcel-by-parcel basis.

The point cost is derived from the market analysis of qualified residential improvement sales. The sales should be no more than 2 to 3 years old with an optimum age of 1 year and if possible, only sales with houses within a grade range of 80 to 120 should be used. The minimum number of sales for a valid point cost study is 10. No maximum number of sales exists. It is imperative that accurate land values have been established for the parcels that are being used in the study.

A point cost is determined for each sale and then averaged. Any existing outlying point costs should be disregarded. The steps that should be used to calculate a point cost for a qualified residential improved sale are as follows:

1. **RESIDUAL IMPROVEMENT VALUE (RIV) = SALES PRICE - (LAND VALUE + OTHER VALUE)**
2. **ADJ RIV = RIV / DEPRECIATION**
3. **POINT COST = ADJ RIV / ADJUSTED POINTS**
4. **RES IMP PT COST = SUM OF POINT COSTS / NUMBER OF SALES**

The items in the above formulae are discussed below:

Sales Price...The sales price is the dollar amount listed on the PT-61 for the property. This amount should be validated and include all items that were part of the sale.

Land Value... The land value should be the fair market value of the land that is associated with the property sale. If a revaluation is under way or a county sees a need to change land values, the land value should reflect the anticipated land value for the property.

Other Value... Other value includes all items, such as, pools, utility buildings, timber, etc., which are not part of the primary residential improvement value.

Depreciation... The percent good that has been assigned or calculated for the residential improvement. If any economic, functional, or percent complete exists, those items must become part of the depreciation by using the following formula:

$$\text{Depreciation} = \text{Physical Dep} \times \text{Economic Obs} \times \text{Functional Obs} \times \text{Percent Complete}$$

Adjusted Points...The adjusted points for a residential improvement can be found on the Improvement Calculation Summary screen shown below. This screen is accessed from the **Residential Improvements** screen by clicking the button labeled **Pricing**.



The screenshot shows the 'WinGAP - Improvement Calculatio...' window with the following data:

Points / Values		
Total Base Area	2008	
Total Base	762	76,200
Heat	36	3,600
Basement	0	0
Attic	0	0
Structure Areas	238	23,800
Fireplace / Misc	23	2,300
Plumbing	95.00000	9,500
Total	1154	115,400
Adjusted	1269	126,900

Depreciation / Factors	
Functional	1.00
Economic	1.00
Override	0.00
% Complete	1.00
Calculated	0.93
CD	1.00
Neighborhood	1.00

RCN: 126,900
FMV: 118,017
Override: 0

Res Imp Pt Cost...The residential improvement point cost is generated by taking the average of the point costs that have been calculated via the procedures described above. However, **CAUTION** should be observed when averaging the point costs. The appraiser must use judgement in discarding outlying point costs. At times, it maybe more appropriate to use other measures of central tendency, such as the median, rather than the arithmetic average or mean. Also, if an adequate number of sales exist, neighborhood or location could become an issue that needs to be addressed and accounted for in the final determination of the residential improvement point cost.

After the residential improvement point cost is calculated it can be entered into the field for the *Residential Impr. Point Cost* on the **Preferences** screen. The point cost can then be applied across the board by running the Reappraise. However, the appraiser should be certain to run the appropriate ratio studies to confirm that the newly generated point cost study is producing statistics that are acceptable.

Following is an example of a residential improvement point cost study.

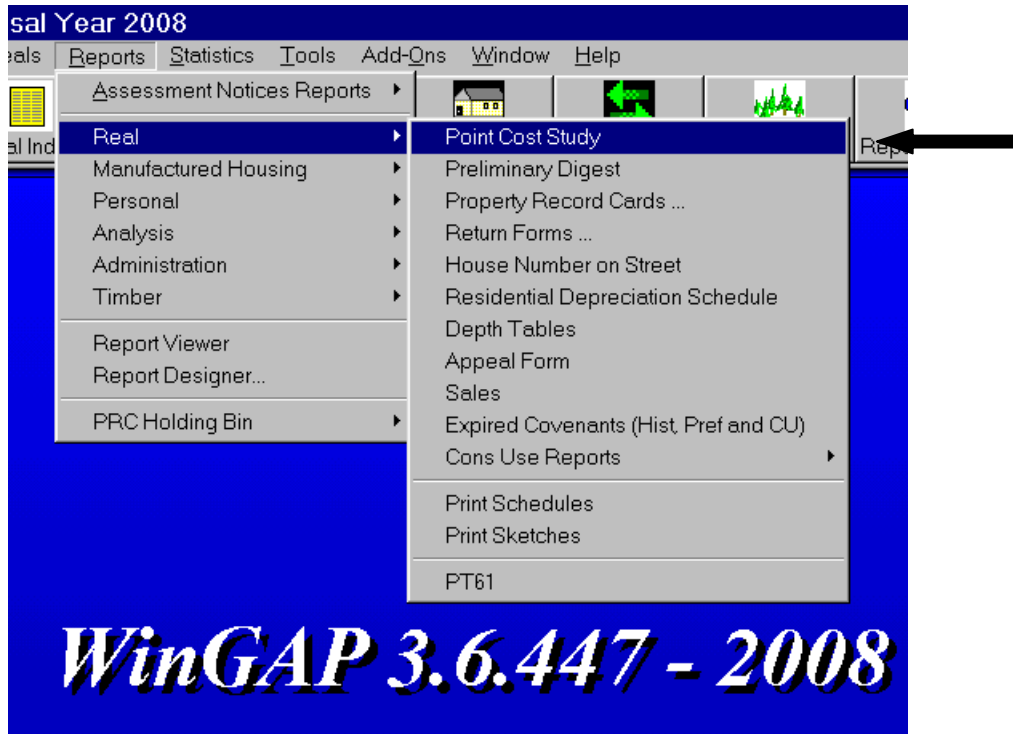
Residential Improvement Point Cost Worksheet

Map Id	Sales Price		Land Value		Other Value		Residual Imp Val		Depr		Adj Res Imp Val		Adj Points		Point Cost.2 decimals	
001-001	86,000	-	(10,000	+	)	=	76,000	/	.95	=	80,000	/	388	=	206.18
001-015	105,000	-	(18,000	+	)	=	87,000	/	.97	=	89,691	/	455	=	197.12
006-099	98,000	-	(15,000	+	)	=	83,000	/	.95	=	87,368	/	445	=	196.33
011-066A	126,000	-	(20,000	+	)	=	106,000	/	.98	=	108,163	/	530	=	204.08
W03-005	112,000	-	(15,000	+	5,000)	=	92,000	/	.95	=	96,842	/	482	=	200.92
													Sum of Pt Cost	1,004.63		

Since the point costs that were generated in the above study are relatively close, it would be acceptable to calculate the mean of the 5 point cost. The average point cost resulting from the above sales would be calculated as follows: $1004.63 / 5 = \mathbf{200.93}$. The residential point cost that would be assigned to the improvements most probably would be \$200.00.

A form for calculating a residential improvement point cost can be found in the Appendix section of the manual.

WinGAP provides the appraiser with an automated method of calculating a Residential Improvement Point Cost. The procedure can be accessed from the **Reports >> Real** sub-menu:



Selecting the Point Cost Study menu option will produce the following report.

10/15/2003

1

Year	Grade	Area	Func	Econ	% Comp	Phy	CDU	Adj Points	Sale Price	Land Value		Bldg Residual	Bldg Res - Adj	Point Value
Pin: 0950391000														
1997	1.00	2329	1.00	1.00	1.00	0.99	1.00	1665.00	135900	15500		120400	121616	73.04
Pin: 0950392000														
1997	1.00	2353	1.00	1.00	1.00	0.99	1.00	1396.00	148900	15500		133400	134747	96.52
Pin: 0950397000														
1999	1.00	2160	1.00	1.00	1.00	0.99	1.00	1206.00	158000	15500		142500	143939	119.35
Pin: 0950398000														
1999	1.00	2279	1.00	1.00	1.00	0.99	1.00	1215.00	171900	15500		156400	157980	130.02
Pin: 0950399000														
1999	1.10	1774	1.00	1.00	1.00	0.99	1.00	1181.00	139900	15500		124400	125657	106.40
Pin: 0950400000														
1999	1.00	2665	1.00	1.00	1.00	0.99	1.00	1481.00	155900	15500		140400	141818	95.76
Pin: 0950401000														
1999	1.00	2438	1.00	1.00	1.00	0.99	1.00	1282.00	161000	15500		145500	146970	114.64
Pin: 0950401000														
1999	1.00	2438	1.00	1.00	1.00	0.99	1.00	1282.00	139000	15500		123500	124747	97.31
Pin: 0950402000														
1998	1.00	1897	1.00	1.00	1.00	0.99	1.00	1095.00	142300	15500		126800	128081	116.97
Pin: 0950403000														
1998	1.00	2022	1.00	1.00	1.00	0.99	1.00	1188.00	130000	15500		114500	115657	97.35
Pin: 0950404000														
1998	1.00	1729	1.00	1.00	1.00	0.99	1.00	1054.00	116800	15500		101300	102323	97.08
Pin: 0950405000														
1999	1.00	2302	1.00	1.00	1.00	0.99	1.00	1308.00	134900	15500		119400	120606	92.21
Pin: 0950406000														
1999	1.00	1761	1.00	1.00	1.00	0.99	1.00	1043.00	118900	15500		103400	104444	100.14
Pin: 0950408000														
1999	1.00	1611	1.00	1.00	1.00	0.99	1.00	968.00	117900	15500		102400	103434	106.85
Pin: 0950410000														
1999	1.00	1622	1.00	1.00	1.00	0.99	1.00	986.00	123900	15500		108400	109495	111.05

Below is the last page of the report as generated in WinGAP:

10/15/2003

4

Year	Grade	Area	Func	Econ	% Comp	Phy	CDU	Adj Points	Sale Price	Land Value		Bldg Residual	Bldg Res - Adj	Point Value
Pin: 0464446000														
2001	1.00	1156	1.00	1.00	1.00	0.99	1.00	613.00	76800	18000		58800	59394	96.89
Pin: 0464055000														
2001	1.00	1289	1.00	1.00	1.00	0.99	1.00	699.00	85900	18000		67900	68586	98.12
Pin: 2700089000														
2001	1.00	1745	1.00	1.00	1.00	0.99	1.00	1030.00	121500	13780		107720	108808	105.64
Pin: 1550163000														
2001	1.00	2069	1.00	1.00	1.00	0.99	1.00	1178.00	134900	14310		120590	121808	103.40
Pin: 2500014000														
2001	1.00	1615	1.00	1.00	1.00	0.99	1.00	962.00	79900	1272		78628	79422	82.56
												Average	100.51	

The report above is generated using the report file, pointcost.rpt. The report is filtered in the following manner with the exception of the sales date and year built values being modified:

```
Reprop.Ovr_Val == 0.00 .and.  
saleinfo.reason = "FM" .and.  
year(saleinfo.saledate) >= 1999 .and.  
reprop.adj_points>0 .and.  
reprop.yr_built > 1992 .and.  
reprop.grade>=.80 .and.  
reprop.grade<=1.20 .and.  
saleinfo.saleprice>iif(realprop.overrideval>0,realprop.overrideval,realprop.a_value+realprop.p_value)
```

The “**year(saleinfo.saledate) >= 1999**” and “**reprop.yr_built > 1992**” sections of the filter are modified by WinGAP. The saleinfo.saledate year is set to a value that is one less than the appraisal year. The reprop.yr_built is also set to one year less than the appraisal year.

The Point Cost Study can be run at any time and as many times as desired. However, the appraiser may discover that the field reprop.adj_points has not been populated. This is a relatively new data item and would hold a value of zero unless the residential improvement has been edited or reappraise for residential improvements has been run.

NOTE: The file Pointcost.rpt can be saved to a different name, and the report can then be modified by the county for user-defined parameters. For example, the report could be modified for different map numbers, and then run in Report Pro to generate information that could be used to create Neighborhood adjustments for different parts of the county. See the next chapter, Development of Neighborhood Adjustments, for more information on this topic.

Development of Neighborhood Adjustments

At times, the calculation of the residential improvement point cost will not produce satisfactory results with regard to ratio studies and the subsequent statistical information. The unacceptable statistics could possibly be the result of unaccounted for influences that are being exerted on properties placed on the market.

One of the more common influences is that of location. The appraiser may find that similar properties in different parts of the county are bringing distinctly different prices on the market. If all other value components, structure size, quality, land, etc., are the same, the primary reason for the difference is that one location is preferred over the other.

The appraiser must account for this value difference with location or neighborhood adjustments. Before the adjustments can be calculated, it is imperative that accurate land values be established and the accuracy of all other data be confirmed. Incorrect land values as well as bad data can greatly distort the influences that might be generated through the following procedures.

The need for neighborhood adjustments is determined by performing a sales/ratio analysis after a point cost study has been conducted. If the coefficient of dispersion or the price related differential do not fall within acceptable ranges and all other data is confirmed as being accurate, the appraiser would then begin to look at location as a possible reason for the unacceptable statistics. An unacceptable coefficient of dispersion would be a value of 12% or greater. A price related differential outside of a .97 to 1.07 range would also be unacceptable.

To best determine where the adjustments need to be applied and how much of an adjustment needs to be made, the appraiser must turn to the original point cost study and analyze the data in a different fashion. The first step would be to organize the data in some meaningful arrangement, such as map id order. Creating an array of sales in map id order should allow the appraiser to see some market trends that are appearing in different areas of the county. The appraiser may see that properties that sold in one particular subdivision are generating point cost that are generally 15% greater than those in other parts of the county. Multiple trends and neighborhoods could possibly be determined if the data set is large enough and the county has many diverse areas. On the following page is a set of sales that demonstrates the effect of location on a point cost and the need for a neighborhood influence.

Residential Improvement Point Cost Worksheet

Map Id	Sales Price		Land Value		Other Value		Residual Imp Val		Depr		Adj Res Imp Val		Adj Points		Point Cost..2 decimals	
001-001	86,000	-	(10,000	+	)	=	76,000	/	.95	=	80,000	/	388	=	206.18
001-015	105,000	-	(18,000	+	)	=	87,000	/	.97	=	89,691	/	455	=	197.12
006-099	98,000	-	(15,000	+	)	=	83,000	/	.95	=	87,368	/	445	=	196.33
011-066A	126,000	-	(20,000	+	)	=	106,000	/	.98	=	108,163	/	530	=	204.08
056A-018	118,000	-	(30,000	+	)	=	88,000	/	.97	=	90,722	/	383	=	236.87
056A-026	125,500	-	(25,000	+	)	=	100,500	/	.95	=	105,789	/	460	=	229.98
056A-026	125,500	-	(30,000	+	)	=	95,500	/	.99	=	100,526	/	431	=	233.24
056B-001	144,500	-	(22,500	+	)	=	122,000	/	.97	=	125,773	/	530	=	237.31
056B-089	131,500	-	(25,000	+	)	=	106,500	/	.98	=	108,673	/	462	=	235.22
W03-005	112,000	-	(15,000	+	5,000)	=	92,000	/	.95	=	96,842	/	482	=	200.92
Sum of Pt Cost														2,177.25		

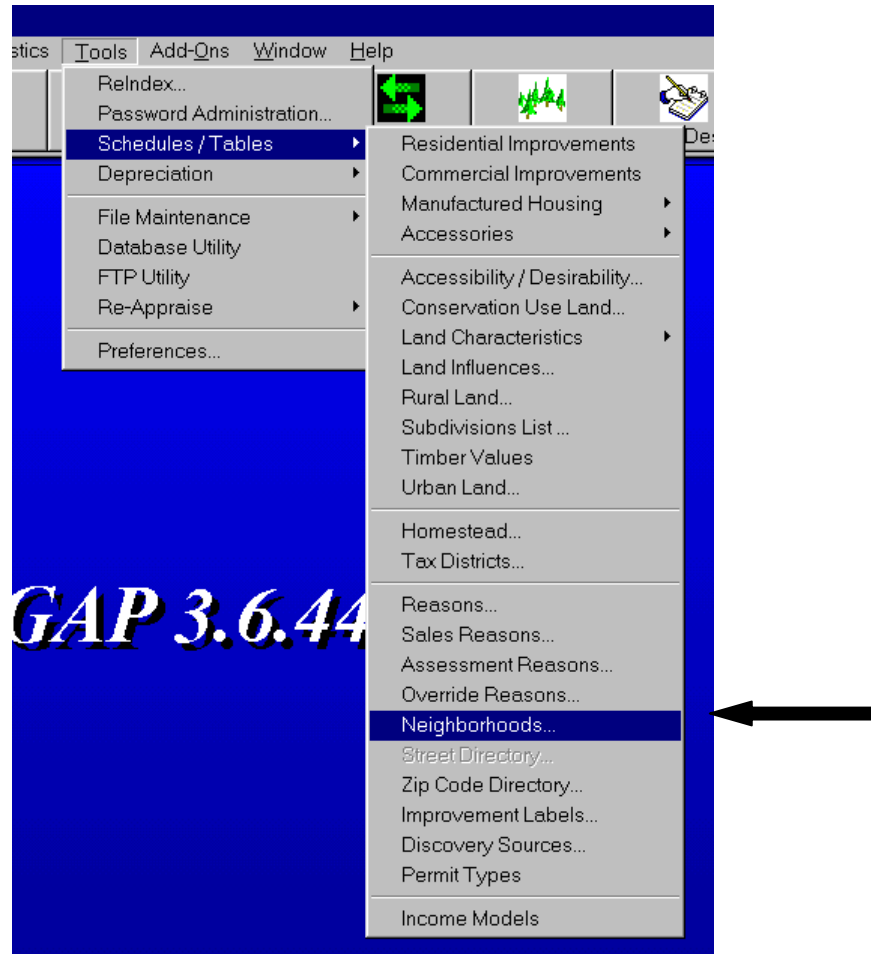
The above sales produce a residential point cost of 217.73 which would probably be accepted as \$215.00. However, looking at the sales in a map id array, the appraiser should readily see a market trend that indicates a need for an adjustment due to location or neighborhood. The properties outside of the 056A and 056B maps have a point cost around \$200.00. Those sales in the 056A and 056B have a point cost averaging about \$235.00. The difference of 17.5%, ((235-200)/200), indicates that one of the areas will be setup as a base area with the other area delineated as a market neighborhood. The point cost from the base area will be the one used in WinGAP calculations for all residential improvements. The improvements in areas other than the base will be adjusted by the neighborhood factor derived from the market.

If the area outside of the 056A and 056B neighborhood is chosen as the base, then a residential improvement point cost of \$200.00 will be entered in the appropriate place in the schedules. A neighborhood for 056A and 056B will be established with a neighborhood adjustment calculated using the following formula:

$$\text{Neighborhood Adj} = \text{Pt Cost in Area outside of Base} / \text{Pt Cost in Base Area}$$

$$\text{Neigh Adj} = 235 / 200 = 117.50 \text{ or } 1.15\%$$

The neighborhood will be established and the associated adjustment will be entered through the [Tools >>Schedules / Tables >> Neighborhoods](#) menu option as shown on the following page.



Clicking on the Neighborhoods... menu option produces the Neighborhoods schedule as shown below.

WinGAP - Neighborhoods

NEIGH	DESCRIPTION	RURLANDADJ	RESLANDADJ
00001	Highland Park Subdivision / Off Cedar Schoals Road	0.90	0.90
00002	Rolling Rock Estates-Section One	0.50	0.50
00003	Rolling Rock Estates-Section Two	1.00	1.00

Code:

Description:

Adjustments

Rural Land	Res Land	Res Imp	Com Imp	Accessory Imp
<input type="text" value="0.90"/>	<input type="text" value="0.90"/>	<input type="text" value="1.10"/>	<input type="text" value="0.90"/>	<input type="text" value="0.90"/>

Using the above schedule, the appraiser can enter as many neighborhoods as are needed to adjust property values where a location modifier is required to generate FMV. Following are descriptions of the fields found on the above screen:

- ❑ **Code** – The code is a six position alpha/numeric field that is user defined. The code must be unique.
- ❑ **Description** – A definition of the code that is precise and informative should be entered in the description.
- ❑ **Adjustments** – Adjustment factors can be entered for each of the five property components. The factors can be different for each component. A maximum value of 99.99 maybe entered for any factor. An adjustment factor of 0.00 will be interpreted as 1.00 in the calculation process.

A schedule item can be added by clicking New, keying the data, and clicking Apply to save.

Neighborhood schedule entries can be modified by selecting the neighborhood from the list, modifying the data, and clicking Apply to save the changes. The Neighborhood code should not be modified unless the appraiser is certain that the code being changed is not in use.

Caution must be exercised in the deleting of a neighborhood. WinGAP will check to see if the neighborhood is being used and warn the user of such, preventing the delete.

At the conclusion of the entry of a neighborhood into the schedules, the user must assign the code to all parcels that are affected. To assign the neighborhood code, the user will edit each parcel's **Real Property General Information** field *Neighborhood* and choose the proper code from the drop-down list that appears when enter is pressed on a blank *Neighborhood*.

After the codes are assigned to all affected parcels, reappraise must be run before any values are adjusted. The residential buildings on each affected parcel can be edited individually to cause the neighborhood adjustment to take effect.

Neighborhood adjustments can be used to “fine tune” appraisal schedules or correct gross errors in the appraisal of residential improvements. However, the appraiser must also be aware that other areas of the residential schedules may need attention. In some cases, the base parameters may need adjustment because larger houses are being priced too low due to the fact that the increment factor is too high. The appraiser may find that improvements with brick exteriors are pricing out too high requiring any adjustment to the exterior wall factor for brick.

Accessory Improvements

Accessory improvements are generally regarded as property components that are detached from the primary structure(s). Pools, utility buildings, detached garages, barns, and poultry houses are examples of structures that would normally be considered as accessory improvements.

Preferences

As is the case with residential improvements, some base schedule items are found on the Preferences screen which can be accessed from the **Tools >> Preferences** menu option.

WinGAP - Preferences

County Information

County Name: Jones
Address: Jones County Government Center
P O Box 1359
City / State / Zip: Gray GA 31032
Phone / Ext: (478)986-6300
Fax: (478)986-6504
Email: jcotax@mto.infi.net
Web:

Point/Base Costs

Residential	100.00
Commercial	100.00
Commercial Base	1.00
Accessory	100.00

Depreciation Years

Residential	2001
Commercial	2001
MFG Housing	2001
Accessory	2001

Other Options

- Truncate Values
- Disable Logins
- bBrowser Cost Form
- Lock System
- Rnd Area Mult to 6 dec.
- Auto-Reasons (Real)
- Auto-Reasons (Pers)
- PT50R = LIVE DATA
- COA Auto-Flag

Special District Description: Special District
Parcel Number Template: XXXXXXXXXX
Customize Lendor Label: Lendor
Customize Occupancy Label: Occupancy
Customize Fireplace Label: Fireplace / Misc

Appraisal Year: 2008
Rural Acre Break: 30.00
PU Eq Ratio %: 40.00
Return Deadline: 04/01/2008
Default Startup Directory: 2008
Guest Startup Directory: 2007

Freeport Raw Material %: 0.00
Freeport Finished Goods %: 0.00
Freeport Out of State %: 0.00
ABOS Default: Low
Land Influences: Compound
ABOS Yr: 2004
NADA Yr: 2004

Close

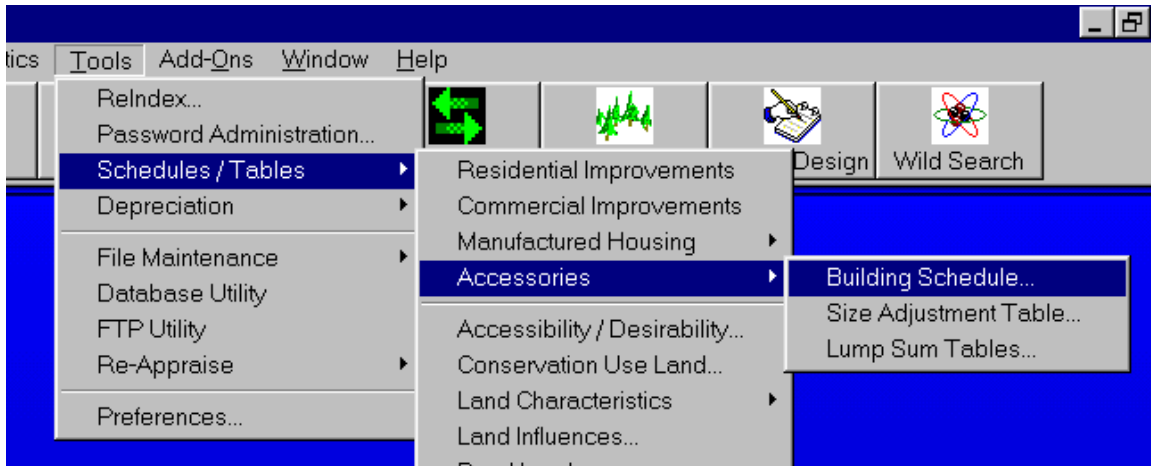
The **Accessory Point Cost** located in the Point/Base Costs section of Preferences is a local index that can be used to update accessory values across the board. If the Accessory Point Cost were doubled, the total value of all calculated accessories would also double.

The **Accessory Depreciation Year** found in the Depreciation Years section of Preferences is used in the calculation of an accessory's age. The year built of the accessory is subtracted from the Accessory Depreciation Year producing the age which is used in the calculation of physical depreciation.

The **Appraisal Year** is used to determine the default year built for all accessories. The default year built will be one year less than the Appraisal Year.

Accessory Schedules Menu

The accessory improvement schedules can be accessed through **Tools >> Schedules / Tables >> Accessories** as shown below.



The Accessories schedule is comprised of 3 submenu options:

- ❑ **Building Schedule** – list of all accessory improvements including pricing information
- ❑ **Size Adjustment Table** – factors used to adjust accessory values with specified size ranges
- ❑ **Lump Sum Tables** – tables used to value accessories that are not valued by area

Each of the menu options above will be discussed in detail below. The discussion will include explanations of how each schedule option functions to include adding, editing, and when available, deleting items within the schedules.

Building Schedule

The **Building Schedule** menu option provides the user access to the listing of all accessory improvement types that are available for the purpose of adding such to a parcel. The following screen shot shows a typical Accessory Building Schedule.

Description	Comp #	Method	Table	Cost
Apartment	0209	1		24.00
Barn	0211	1		7.20
Barn With Loft	0210	1		9.36
Barn: Horse	0212	1		8.76
Bath House	0039	1		12.00
Batting cage	9999	1		12.00
Block Accessory Bldg	0112	1		4.32
Canopy/Hay Shed/Pole Barn	0280	1		2.76
Canopy-Gas Pumps	2050	1		8.40
Comm. Fence: Chain Link	1050	2	75	0.00
Commercial lights	9998	1		12.00
Concrete Around Pool	0001	1		12.00

Pricing Information

Comp # Description

Pricing Method Base Cost

The Accessories Building Schedule is divided into two sections. Existing types of Accessory Improvements are displayed in the list box on the top of the Form, in alphabetical order. For each type of Accessory Improvement, the following information is displayed, from left to right,

- the Description of the item,
- the Comp # (Component Number),
- the Method (Calculation Method),
- the Table (used for Lump Sum items only),
- the Cost (the Base Cost) are displayed.

. Items from the list can be selected by two primary methods:

- sliding the vertical scroll bar on the right until the desired item is visible and then clicking on it
- typing the item's description producing an incremental search (Caution: before typing the description, be certain that the cursor is not flashing in one of the Pricing Information fields)

Clicking on an item in the list box will display the calculation data about the item in the Pricing Information section at the bottom of the Form.

The Pricing Information section of the schedule provides the user with fields to enter information that will allow the accessory to be valued when data entry is performed on a parcel. Following is an explanation of each of the fields:

- ❑ **Comp #** - a four character user defined code that is used to identify the accessory item. The code **MUST** be unique. Any mix of letters and numbers is acceptable. All four positions do not need to be used. An Edit button is located to the right of the Comp # field. The button is placed there to prevent inadvertent changes to an existing component number. If a component number is to be modified, the user must first click the Edit button.
- ❑ **Description** – definition of the accessory schedule item. The definition should be clear and precise. As documented above the user may access the accessory item with the description. This applies to the schedule item and also to data entry at the parcel level. Careful consideration should be given to the descriptions to facilitate data entry.
- ❑ **Pricing Method** – defines the manner in which the accessory will be valued. Three different pricing methods are available.
 - Lump Sum – used for accessories that will not be valued on a square foot or area basis. The valuation of these accessories is table driven. Consequently, any accessory with a Lump Sum pricing method must also be assigned a Table Code. No Base Cost is needed.
 - Non-Value Item – used for accessories where value generation is not desired. Most often used for items such as garbage collection or street lights where a user-fee system is established by the County.
 - Square Foot – used for accessories that will be valued by the square foot or area. No Table Code should be assigned for these accessories. A Base Cost is required.
- ❑ **Table Code** – used to tie the accessory item to the lump sum table entries. Clicking on the Table Code field description will provide the user access to the accessory lump sum tables. Lump Sum tables and the data entry will be discussed later. Accessory items that have been assigned a pricing method of Lump Sum must have a table code.
- ❑ **Base Cost** – The displayed base cost is a result of the following formula being applied to information stored in acc_ctrl.dbf:

$$\text{Base Cost} = \text{acc_ctrl.base_cost} * \text{Acc Base DSF \{round to 2 dec\}}$$

The Acc Base Dollars PSF is found in the Accessory Size Adjustment table and is the value that has been set for the standard accessory size range. In the screen image on the next page, the base size range is 1 to 1000 sf which is assigned a Dollars PSF of 1.00 (See Note Below). Accessory size adjustments will be discussed in more detail in the Size Adjustment section.

SQ_FT_TO	SQ_FT_FROM	BASE_SIZE
1	1000	Y
1001	2000	N
2001	9999999	N

Square Feet To:

Square Feet From:

Dollars PSF: Base Size

Buttons: Help, Cancel, New, Delete, Apply, OK

The actual square foot value should be keyed in the Base Cost field. WinGAP will perform the necessary conversion for data storage.

A NEW Accessory Improvement item can be added to the Accessory Building schedule by

- clicking the New Button at the bottom of the Form
- keying the Description for the new item into the Description field,
- clicking on the combo box for the Pricing Method to select the appropriate Pricing Method, keying values into the Table Code and Base Cost fields, depending upon the pricing method,
- clicking the Apply or OK Button.

An Accessory Improvement item is edited by

- clicking on the item in the list box,
- changing the information in the desired field(s),
- clicking the Apply or OK Button.

Accessory items can be deleted by selecting the item from the list and clicking Delete. If a component number has been assigned to an active accessory improvement, WinGAP will not allow the deletion of the schedule item.



At the bottom left of the Accessories Building Schedule Form is the **Print List** Button, which will print a parcel number listing showing where each accessory improvement is located. For example, the user desires a listing of all Barns With Loft. The Barns With Loft item should be selected in the list box at the top of the Form. Clicking the Print List Button will produce a print preview of all the Barns With Loft, as shown on the next page.

11/24/2007 1

Accessory List

<u>Parcel Number</u>	<u>Realkey</u>	<u>Comp_No</u>	<u>Description</u>
J16 00 016A	12226	0210	Barn With Loft
J24A00 141	5709	0210	Barn With Loft
J27 00 058	8784	0210	Barn With Loft
J31 00 012	5634	0210	Barn With Loft
J32 00 079	7611	0210	Barn With Loft
J38 00 157	7098	0210	Barn With Loft
J38 00 188	7069	0210	Barn With Loft
J45 00 297	6102	0210	Barn With Loft
J51 00 277	5087	0210	Barn With Loft
J53 00 018	6294	0210	Barn With Loft
J53 00 227	6181	0210	Barn With Loft

<<< End of Report >>>

Size Adjustment

The Accessory **Size Adjustment** schedule can be accessed through **Tools >> Schedules / Tables >> Accessories >> Size Adjustment Table**. The Size Adjustment Table, below, allows the user to enter as many square foot ranges as deemed necessary to accurately value accessory improvements. Each square foot range will be assigned a dollar per square foot cost which will form the basis for valuing Square Foot method accessories. This table would normally be used to create a reduction in unit cost as size increases.

WinGAP - Size Adjustment Table

SQ_FT_TO	SQ_FT_FROM	BASE_SIZE
1	1000	Y
1001	2000	N
2001	9999999	N

Square Feet To:

Square Feet From:

Dollars PSF Base Size

The appraiser has entered three square foot ranges in the schedule above:

Square Feet To	Square Feet From	Dollars PSF
1	1000	1.00
1001	2000	1.00
2001	9999999	1.00

A NEW entry to the Table can be entered by

- clicking the New Button
- keying the square foot level that will define the lower level of the pricing range in Square Feet To
- keying the square foot level that will define the upper level of the pricing range in Square Feet From
entering the \$/ SF amount for the range in Dollars PSF. The Dollars PSF should be the actual dollar amount that is desired for that square foot range.
- if the price range will be defined as the default size or base range for accessory valuation a check mark should be placed in the Base Size box; if the size range is not the base, the Base Size box should be left blank. NOTE: Only one size range can be defined as a Base Size. After the Base Size box is checked, it will be disabled for all other size ranges until the check mark is removed.
- Clicking the Apply or OK Button to save the entry.

A Size Adjustment entry can be changed by clicking in the list box on the appropriate item and then changing the desired data. After changing the data, the Apply or OK Button can be clicked to save the change.

A Size Adjustment entry can be deleted by clicking in the list box on the appropriate item and then clicking the Delete Button. WinGAP will warn the user prior to deleting the item from the schedule.

Important: As mentioned above, one of the entries in this table must be marked as the base accessory size. This is used to inform WinGAP as to which Dollar PSF is the basis for the calculation of accessory values when stored in the tables. The Base Size is designated by placing a check mark in the box to the left of Base Size.

Lump Sum Tables

The **Lump Sum** tables can be accessed from **Tools >> Schedules / Tables >> Accessories >> Lump Sum Tables** and provides the appraiser with the ability to enter schedule items that will be used to value accessories which are not typically valued by the square foot. Examples of such accessories would be grain bins, silos, fences, etc. Before an entry is made in the Lump Sum Tables, the appraiser should have established an accessory schedule item in the Building Schedule and provided the item with a Table Code as discussed in Building Schedules. Whether the Lump Sum Tables schedule is accessed from the menu tree or from the Table Code button on the Building Schedule, the schedule looks and functions similar to the one show on the next page.

WinGAP - Accessory Tables

Description	TableRef	Dim1	Dim2	Points
Comm. Fence: Chain Link	75	6	0	0.054000
Comm. Fence: Chain Link	75	8	0	0.076000
Comm. Fence: Chain Link	75	10	0	0.102000
Comm. Fence: Chain Link	75	12	0	0.125000
Driveway	80	1	0	0.011000
Driveway	80	2	0	0.006000
Driveway	80	3	0	0.017000
Driveway	80	6	0	0.120000
Driveway	80	8	0	0.160000
Driveway	80	10	0	0.200000
Driveway	80	12	0	0.240000
Golf Course	12	1	0	0.014000

Table Reference: Unit Dollars:

Dimension 1:

Dimension 2:

Buttons:

The Lump Sum Schedule Form, above, displays the existing schedule items in the list box on the top of the form. The column headings refer to the DESCRIPTION, TABLEREF code number, the DIM1 and DIM2 pointers, and the POINTS assigned to this type of Accessory Building. The schedule is indexed in Description order. The calculation data for each item in the list box can be displayed in the fields on the bottom of the form by clicking on an item. An explanation of each of the fields on the schedule form follows.

The list box on the top of the form provides the user access to any schedule item that is present. When an item is selected, the four fields on the right are filled with data that has been recorded for the item. If a new entry is made, the fields must be completed. An explanation of each field follows:

- ❑ **Table Reference** – table code that was assigned to accessory on the Building Schedule. Multiple entries of a table code may be found in Lump Sum Tables. The Table Reference of 75 is a code that has been assigned to the accessory, Comm Fence: Chain Link. When adding an item to the Lump Sum Accessory schedule, this Table Reference must already exist in the Accessory Building Schedule. WinGAP will assign the Description of the item in the Accessory Building Schedule with this Table Reference to the Description of the Accessory Lump Sum item. This is why there is no Description data entry field on the Lump Sum form. If the Table Reference of the Lump Sum does not exist in the Accessory Building Schedule, the Description of the Lump Sum item will say "Not currently assigned".
- ❑ **Dimension 1** – a numeric code that is user defined. In the example above, Dimension 1 relates to the height of the chain link fence. In the case of grain bins, Dimension 1 may designate the diameter of the bin. The user is responsible for maintaining the definitions of these characteristics. The value must be numeric, and 0 is acceptable.
- ❑ **Dimension 2** – used in the same manner as Dimension 1. It is an additional means of adding items to the menu. In the chain link fence example above, Dimension 2 is not

used and is assigned a value of zero. In the case of a grain bin, Dimension 2 represents the height of the grain bin.

- **Unit Dollars** – The entry in unit dollars should be the actual cost of the item.

A new item can be added to the Lump Sum Schedule by

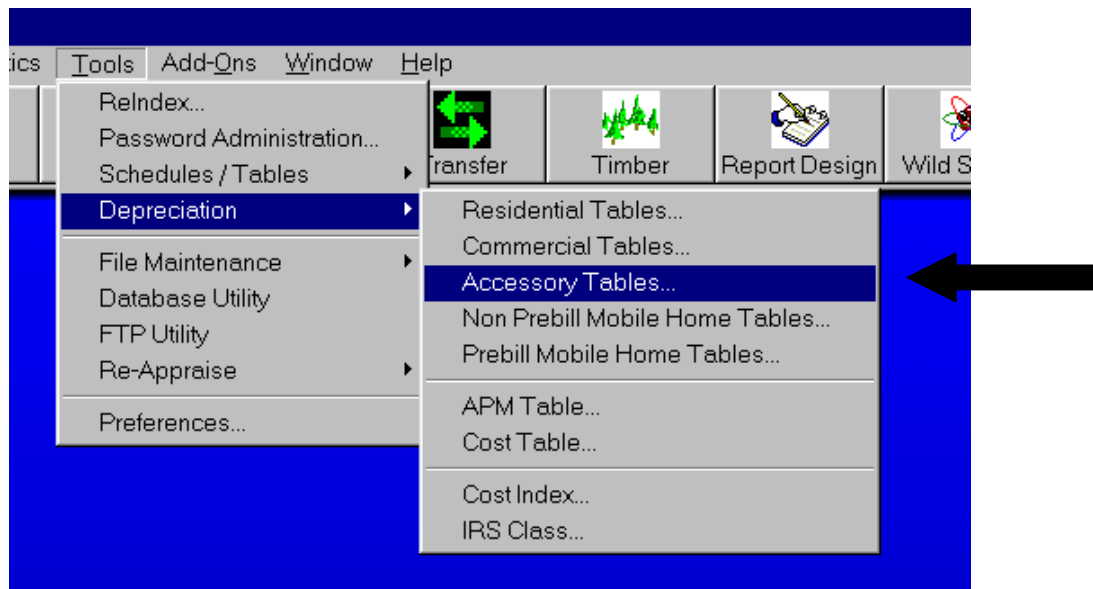
- clicking the New Button at the bottom of the Form.
- entering the Table Reference # code which is County-defined
- keying the values for the Dimension 1, Dimension 2, and Unit Dollars fields.
- the Apply or OK Buttons can be clicked to save the item to the schedule.

An item can be deleted from the schedule by first selecting the item in the list box and then clicking the Delete Button at the bottom of the Form. The user should be certain that this Lump Sum Schedule item is not used by any Accessory Buildings prior to clicking the Delete Button.

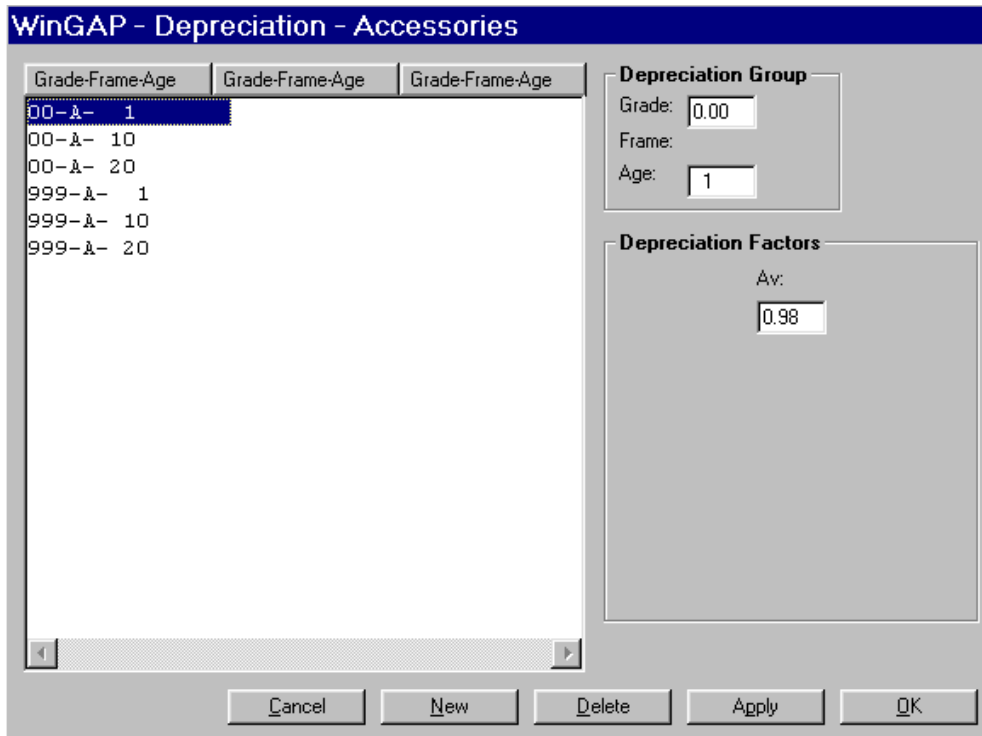
The complete Lump Sum Schedule can be printed by using either the Report Designer or FoxPro.

Depreciation

Accessory improvements can be depreciated with an override depreciation or through a depreciation table lookup. The depreciation table for accessories can be accessed by going to **Tools >> Depreciation >> Accessory Tables** as shown below:



Clicking on the Accessory Tables menu option above produces the accessory depreciation table as shown on the next page:



As with the Residential Improvement Depreciation schedule, the number of Grade and Age combinations is virtually unlimited. However, the only category under the Depreciation Factors section of the schedule that need be completed is the Av column. Accessory items are not assigned a condition. Consequently, all accessory conditions default to average.

If the grade of the improvement does not match a grade in the table, the next lowest grade is chosen. If no lower grade level exists in the table, the factors associated with the lowest grade level are used. For example, if the depreciation table contained grade increments of 60 and 85, and the grade of the improvement was 70, the depreciation amounts for grade 60 would be used. If the improvement was assigned a grade of 40, the 60 grade level would be used since 60 is the lowest grade level in the table.

However, if the age of an improvement falls within an age level range, the following interpolation routine is used to calculate the depreciation. The steps and formulae for interpolating accessory improvement depreciation can be found below.

1. **Depr Increment = abs(Depr from Lower Age Level – Depr from Higher Age Level)**
2. **Inc Factor = Depr Inc / abs(Higher Age Level – Lower Age Level) {rnd to 2 dec}**
3. **Depr Adj = (Act Age – Lower Age Level) * Inc Factor {rnd to 2 dec}**
4. **Calc Dep = Depr from Lower Age Level – Depr Adj**

Calculation Steps & Formulas

The following steps and formulae are used to calculate a value for an accessory item that is priced under the **square foot method**.

1. the accessory item is found in the Building Schedule and the Base Cost is obtained
2. Calculate the square footage of the accessory
3. Lookup Dollars PSF in the Size Adjustment table
4. Calculate depreciation
5. Lookup Neighborhood adjustment if applicable
6. The internal WinGAP formula below is applied:

$$\text{Value} = (\text{Base Cost} * \text{Dollars PSF}) * \text{Sq Ft} * \text{Grade (exp as decimal value)} * \text{Depr} * \text{Neighborhood Adj} * \text{Percent Complete} * \text{Func Obs}$$

If the appraiser wishes to use the actual dollars that are displayed on the schedule screens, the following formula should be used:

$$\text{Value} = (\text{Base Cost} * (\text{Dollars PSF} / 10)) * \text{Sq Ft} * \text{Grade (exp as decimal value)} * \text{Depr} * \text{Neighborhood Adj} * \text{Percent Complete} * \text{Func Obs}$$

Using the schedules and steps above, a barn with the following characteristics

Grade	60
Year Built	1997
Length	50
Width	45
Neighborhood	1.00

would be valued as follows:

1. Base Cost from Building Schedule is 2.40
2. Sq Ft = $50 * 45 = 2250$
3. Dollars PSF from Size Adjustment table is 16.00
4. Depreciation:
 - a. Age = $2001 - 1997 = 4$
 - b. Depr Inc = $\text{abs}(.98 - .70) = .28$
 - c. Inc Factor = $.28 / \text{abs}(10 - 1) = .28 / 9 = .03$
 - d. Depr Adj = $(4 - 1) * .03 = 3 * .03 = .09$
 - e. Calc Depr = $.98 - .09 = .89$
5. Value = $(2.40 * 16.00) * 2250 * .60 * .89 * 1.00 * 1.00 * 1.00 = 46,138$

Lump Sum accessory items are valued with the following steps and formula.

1. The Table Code is acquired from the Building Schedule
2. Schedule items with the Table Code are located in the Lump Sum Table
3. Dimension 1 and Dimension 2 values from the accessory record are used to isolate entry in Lump Sum Table
 - a. If an exact match of the Dimension1 and Dimension 2 values is found, the points associated with that record used
 - b. If an exact match is not found but a match for Dimension 1 is located, the next higher match is taken and the points assigned to that record are used. For example, if the following two records existed in the Lump Sum table and the accessory Dimension 1 was 15 and Dimension 2 was 13, the Points value of 24.06 would be used.

Dimension 1	Dimension 2	Points
15	11	18.94
15	15	24.06

- c. If no match for Dimension 1 is found, the lookup will default to the highest entry of the next lowest Dimension 1 entry in the Lump Sum table. For example, shown on the next page, if the following three records existed in the Lump Sum table and the accessory Dimension was 17 and Dimension 2 was 13, the Points value would be taken from the 18 x 8 row.

Dimension 1	Dimension 2	Points
15	11	18.94
15	15	24.06
18	8	12.14

4. The number of units from the accessory record is obtained
5. The following internal WinGAP formula is applied:

Value = Grade from Acc * # of Units * Points * Acc Pt Cost * Neigh Factor * Depr * Percent Comp * Func Obs {round to 0 dec}

To calculate the value based on information from the Accessory Tables / Lump Sum Schedule screen, the following formula would be used:

Value = Grade from Acc * # of Units * Unit Dollars * Neigh Factor * Depr * Percent Comp * Func Obs {round to 0 dec}

Using the schedule below and the following information about the accessory,

Dimension 1	Dimension 2	Points
15	11	18.94
15	15	24.06
18	8	12.14

Grade	1.00
Dimension 1	15
Dimension 2	16
Units	2
Phy Dep Ovr	.75
% Comp	1.00
Func Obs	1.00
Neighborhood Factor	1.00

the value would be calculated as follows:

$$\text{Value} = 1.00 * 2 * 24.06 * 200 * 1.00 * .75 * 1.00 * 1.00 = 7218$$

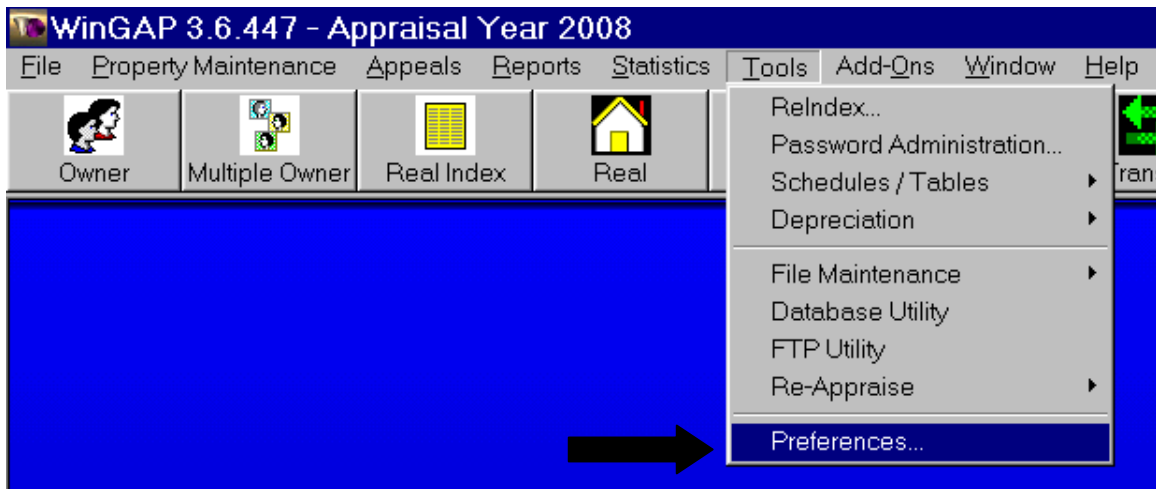
Rural Land Schedules

Rural land pricing in WinGAP is developed using the valuation methodology prescribed in the Appraisal Procedures Manual (APM). Rural land is broken down into two categories, large tracts and small parcels. Large tracts are valued based on use and production capabilities with adjustments for location and size. Small parcels are valued on a tract basis or with the use of a base value. Both small parcel methods incorporate adjustments for size and location into the valuation process.

Preferences

One of the first steps in the valuation of rural land is to establish a small acre break. The small acre break is the acreage level at which buyers and sellers of rural land begin to consider the capability of the land to produce crops more so than considering its potential for residential purposes.

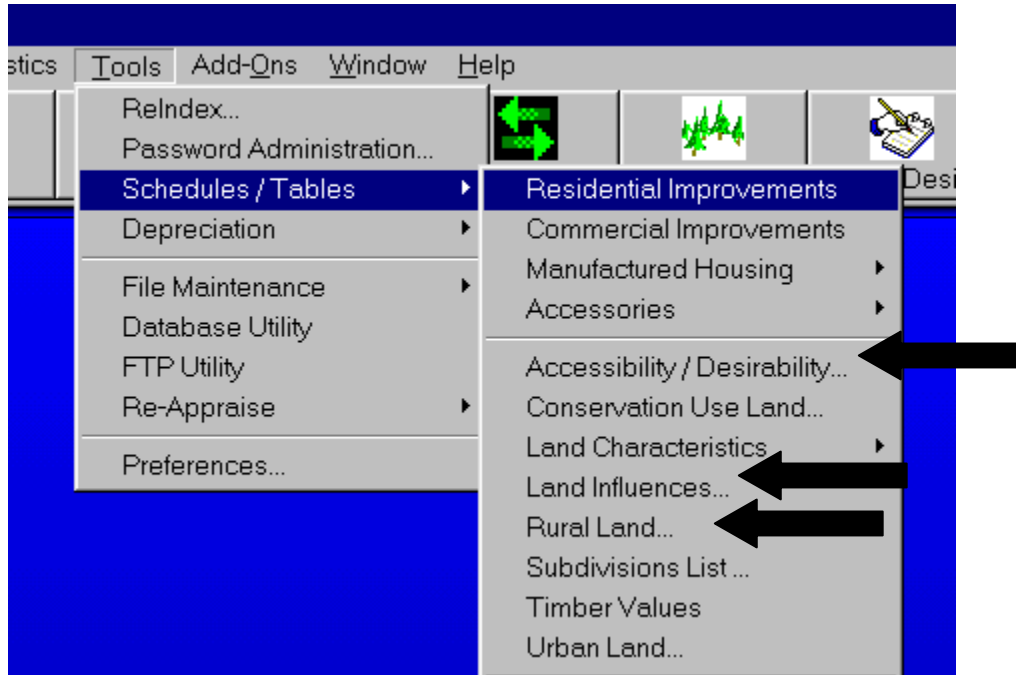
The small acre break in WinGAP is found on the Preferences screen which is accessed through the Tools menu.



After the appraiser has determined the small acre break, it is keyed in the **Rural Acre Break** field on the Preferences form shown on the next page.

Rural Land Schedules Menu Items

Other than the items discussed in Preferences for rural land, the other schedules can be accessed through **Tools >> Schedules / Tables** as shown below.



The menu options that provide access to rural land schedules are

- Accessibility / Desirability
- Land Influences
- Rural Land

Accessibility / Desirability

The Accessibility / Desirability table is designed to accommodate tract values for small parcels and factors to adjust large parcel values. The tract values and factors are assigned to acre increments and up to 45 accessibility / desirability code combinations at the acre increment. As many acre increments as needed can be added to the table. An example of an Accessibility / Desirability table with an acre increment less than the Rural Acre Break is shown on the next page.

WinGAP - Accessibility / Desirability [X]

Acre Increment: 7.00 [Edit Acres]

<< >>

	A	B	C	D	E
1	38486.0000	37800.0000	30100.0000	28000.0000	27300.0000
2	30100.0000	28000.0000	20860.0000	20790.0000	19460.0000
3	29400.0000	25900.0000	24500.0000	20300.0000	19250.0000
4	26950.0000	25550.0000	24150.0000	19950.0000	18900.0000
5	24500.0000	23800.0000	17150.0000	15925.0000	15050.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000	0.0000	0.0000

Help Cancel New Delete Apply OK

The table above shows tract values for the 7.00 acre increment using 5 accessibility and all 5 desirability categories. The table is loaded with tract values due to the 30.00 Rural Acre Break in Preferences.

The screen below shows an Accessibility / Desirability table with factors for large tracts, those parcels that have acreage equal to or greater than the Rural Acre Break.

WinGAP - Accessibility / Desirability [X]

Acre Increment: 30.00 [Edit Acres]

<< >>

	A	B	C	D	E
1	4.5300	3.0600	2.0500	1.3800	0.9300
2	3.5100	2.3700	1.5900	1.0700	0.7200
3	2.7200	1.8400	1.2300	0.8300	0.5600
4	2.1200	1.4300	0.9600	0.6400	0.4300
5	1.6400	1.1000	0.7400	0.5000	0.3400
6	1.2700	0.8600	0.5700	0.3800	0.2600
7	0.9800	0.6600	0.4400	0.3000	0.2000
8	0.0000	0.0000	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000	0.0000	0.0000

Help Cancel New Delete Apply OK

The tract values in the first screen shot of the Accessibility / Desirability table can be converted to factors by

- ❑ keying a base small parcel value in the Rural Land table. It is recommended that the base value be 1000 or greater due to rounding of the factors.
- ❑ Changing the Rural Acre Break in Preferences 0.00
- ❑ Converting the tract values in the table to factors by dividing the tract value by the acre level and then by the base small parcel value.

Using the procedure in the third bullet above, the tract value of 38,486 for the 7.0 acre 1A entry would be converted to a factor of 5.498. (38,486 / 7 / 1000) {round to 4 dec}

Acre increments can be added by clicking New, keying the data and clicking Apply to save. Acre increments should be added at the point where the slope of the accessibility / desirability trend line changes.

An acre increment can be modified by selecting the acre level from the combo box, clicking Edit Acres, making the modification and clicking Apply to save.

Factors and tract value can be modified by selecting the Acre Increment in the combo box, clicking in the accessibility / desirability field that is to be changed, making the changes, tabbing to the next field if needed and clicking Apply to save.

An acre increment can be deleted by selecting the acre increment in the combo box and clicking Delete.

It is not necessary to add an acre increment for each acre. An interpolation routine is used to calculate tract values and factors for acre increments that are not part of the table. The interpolation routine will be discussed below in the Calculation section of rural land.

Calculations

The calculation of a rural land tract with acreage less than the Rural Acre Break is as follows:

1. Tract value is obtained from the Accessibility / Desirability table based on the parcels acreage and accessibility / desirability code.
2. If the exact acreage is not found in the table, the tract value is interpolated with the formula below:

$$\text{Int Value} = (((\text{parcel acres} - \text{lower acre level}) / (\text{higher acre level} - \text{lower acre level})) * (\text{value @ higher acre level} - \text{value @ lower acre level})) + \text{value @ lower acre level}$$

3. The value or interpolated value is then multiplied by the total influences and then the neighborhood influence.

Following is an example of the above calculation based on the schedule and parcel information below:

Rural Acre Break	25.00
Acc / Des	1A
Parcel Acres	7.75
Value at Acre Inc 7.00	17,738
Value at Acre Inc 8.00	19,064
Neighborhood/Other Influences	1.00

$$\text{Int Value} = (((7.75 - 7.00) / (8.00 - 7.00)) * (19064 - 17738)) + 17738$$

$$\text{Int Value} = ((.75 / 1.00) * 1326) + 17738$$

$$\text{Int Value} = (.75 * 1326) + 17738$$

$$\text{Int Value} = 995 + 17738 = 18733$$

$$\text{FMV} = 18,733 * 1.00 \text{ (other infl)} = 18.733$$

The steps and formula for calculating a rural land parcel with acreage equal to or greater than the Rural Acre Break are as follows:

1. Base per acre values are obtained from the Rural Land schedule for each land category and productivity rating, also referred to as a land subrecord, comprising the parcel.
2. Accessibility / Desirability factor is obtained or interpolated from the Accessibility / Desirability Table based on the parcel's acreage and accessibility / desirability code. A code of 0A always is assigned a factor of 1.00.
3. Raw land value is calculated by multiplying the acres assigned to each land subrecord by the category / rating base rate.
4. The individual calculations in Step #3 are summed.
5. The sum of the raw land is multiplied by the acc / des factor.
6. The result of step #5 is then multiplied by neighborhood adjustment and then by the total influence from the Land Influences section of the Land Info screen

Below is an calculation example of a rural land parcel with the following characteristics and an acreage that is greater than the acre break.

Parcel Acres	155.00
Acc / Des	3C
Land Subrecord Acres	Open / 3 / 85.00
Land Subrecord Acres	Wood / 4 / 70.00

Schedules:

Acc / Des: 3C @ 100.00 acres	1.4336
Acc / Des: 3C @ 200.00 acres	1.1170
Open 3 / acre	1200
Wood 4 / acre	800
Neighborhood/Other Influences	1.00

Calculation:

1. Acc / Des Interpolation:

Int Value = (((parcel acres – lower acre level) / (higher acre level – lower acre level)) * (value @ higher acre level – value @ lower acre level)) + value @ lower acre level

$$\text{Int Value} = (((155 - 100) / (200 - 100)) * (1.1170 - 1.4336)) + 1.4336$$

$$\text{Int Value} = ((55 / 100) * -.3166) + 1.4336$$

$$\text{Int Value} = (.55 * -.3166) + 1.4336$$

$$\text{Int Value} = -.1741 + 1.4336$$

$$\text{Int Value} = 1.2595$$

2. Raw Land:

Open 3	1200 * 85	102,000
Wood 4	800 * 70	56,000
Total		158,000

3. FMV = 158,000 * 1.2595 * 1.00 * 1.00 = 199,001

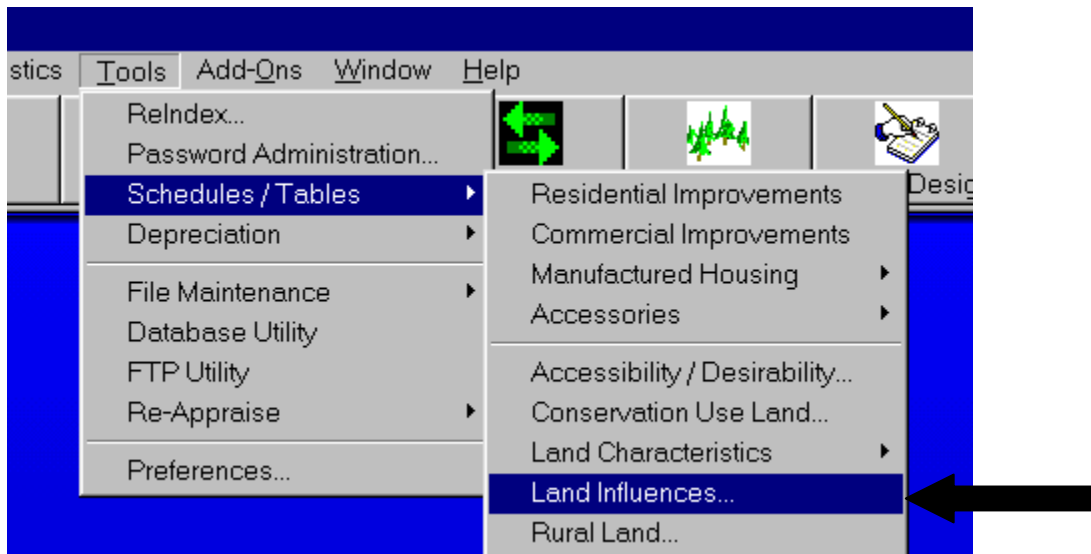
The exception to the calculation process above is in a situation where a land subrecord (category / rating) has been assigned a per acre override. The acc / des factor is calculated in the same manner but is not applied to the overridden subrecord. For example, if the Wood 4 subrecord would have been assigned a per acre override of \$500, the calculation would have proceeded as shown below:

Open 3	1200 * 85	102,000
Wood 4	500 * 70	35,000
Total		137,000

$$\text{FMV} = ((102,000 * 1.2595) + 35,000) * 1.00 \text{ [other inf]}$$

$$\text{FMV} = (128,469 + 35,000) * 1.00 = 163,469$$

Land Influences



The Land Influences table, below, which is reached from the **Tools >> Schedules / Tables >> Land Influences** menu option as shown above, is used to create all of the different influence options that are needed. These options will appear in the combo boxes in the Land Influence section of the Land Information screen, the second image below.

The screenshot shows the 'WinGAP - Background Information : PROP CHAR INFLUENCE' dialog box. On the left, there is a list of influence types: Topography, Corner, View, Water, Transitional, Neighborhood, and Other. On the right, there are input fields for 'Code' (001) and 'Descrip' (Topography). Below these are 'Values' for 'Lump Sum \$' (0), '\$ / Square Feet' (0.00), and 'Cost Multiplier' (0.00). At the bottom, there are buttons for Help, Cancel, New, Delete, Apply, and OK.

The screenshot shows the 'WinGAP - Land Information' screen. The 'Land Use' section is set to 'Rural'. The 'Land Influences' table is highlighted with a black box. The table shows the following values:

	%		%
Topography	0.97	Transitional	1.00
Corner	1.00	Neighborho	1.00
View	1.00	Other	1.00
Water	1.00	Neighborhood	1.00

Below is an example of the difference in value that could result from using the Additive method vs the Compound method.

Raw Land Value = 10,000
 Corner Influence = 1.25
 Topo Influence = .90
 Water Influence = 1.30

Additive Method:

Corner	1.25 – 1.00	.25
Topo	.90 – 1.00	-.10
Water	1.30 – 1.00	.30
Total Infl		.45
Additive Infl	Total Infl + 1.00	1.45
Raw Land		10000
Infl Land	Raw Land * Add Infl	14,500

Compound Method:

Compound Infl = $1.25 * .90 * 1.30 = 1.46$
 Infl Land = $10,000 * 1.46 = 14,600$

The method of applying land influences is strictly a call made by the appraiser. Once selected, the method will be applied globally to all land.

The appraiser can add influences by clicking the New button, keying the Description and clicking Apply to save. Existing influences can be edited by selecting the influence from the left hand list box, making the changes to the Description and clicking Apply to save. Influences cannot be deleted except through FoxPro. Before deleting an influence, the user should confirm that the influence has not been assigned to any parcel.

Rural Land

The Rural Land menu option on the **Tools >> Schedules / Tables** menu should be used to add land categories and key the base per acre values for the categories. The Rural Land schedule appears as below:

Productivity Rating								
1	2	3	4	5	6	7	8	9
1800	1600	1400	1100	900	0	0	0	0

Up to 99 categories of rural land can be added by clicking New, keying the Description and per acre values for any or all of the 9 Productivity Ratings and clicking Apply to save. Categories can be edited by selecting such from the left hand list box, making the modifications to the Description or Productivity Rating values and clicking Apply to save. As with other schedule items, rural land categories may be deleted but with caution so as not to remove a category that could be in use. To delete a category, select it from the list box and click Delete.

2. Calculate the physical depreciation using the following criteria and the WinGAP depreciation interpolation routine.

Res Imp Dep Year	2001
Year Built	1976
Depreciation at Age 20	.74
Depreciation at Age 30	.62

3. Using the calculation worksheet and residential improvement schedules in the Appendix, manually calculate the value of the following house:

Grade	125
Ext Walls	Vinyl
Full Baths	3
Heat Type	Cent Heat/AC
Living Area – labeled 2st	750 sf on ground floor
Living Area – labeled 1st	1150 sf
Fireplace	one 2-sty const w/ two fireboxes
Garage	400 sf
Deck	600 sf
Basement	800 sf 75% finished/Avg Qual
Year Built	1995
Condition	Good

4. A new residential improvement point cost of \$225 has been calculated. It appears that the relationship between all schedule items remains the same. However, instead of changing the point cost, the Board of Assessors desires to modify the residential improvement schedules to reflect as closely as possible the actual cost. Following are the schedule items that need to be modified. Using the residential improvement schedules in the Appendix, make the necessary modifications to the items below.

Menu Option	Menu Item	Cost / Factor
Point Cost		
Base Dollars		
Heat Dollars		
Attic Type		
Attic Finish Adj		
Basement Coverage		
Basement Finish Adj		
Heat		
	Cent Heat / AC	
	Cent Heat	
	Cent AC	
	Fir/Wall Furnace	
	Steam	
	Baseboard	
	No Heat / Space Heaters	
	Fir / Wall Furn w/ Cent AC	
	Bsbd w/ Cent AC	
	Steam w/ Cent AC	
	Solar	
	Thermal	
	Heat Pump	
Misc Items (Fireplaces)		
	F/P – 1 sty Prefab	
	F/P – 2 sty Prefab	
	F/P – 1 sty 1 box const	
	F/P – 2 sty 1 box const	
	F/P – 1 sty 2 box const	
	F/P – 2 sty 2 box const	
	F/P – 2 sty 4 box const	
	F/P – 1 sty massive w/ stone work	
	F/P – 2 sty massive	
	F/P – No value	
	Sink	
	Shower	
Plumbing		
	Standard Complement	
	Extra Fixtures	
Appendages		
	Open Porch	
	Garage	
	Patio	
	Screen Porch	
	1 Story	

5. Determine a residential improvement point cost and if necessary a neighborhood adjustment from the following sales:

**Residential Improvement Point Cost
Worksheet**

Map Id	Sales Price		Land Value		Other Value		Residual Imp Val		Depr		Adj Res Imp Val		Adj Points		Point Cost.2 decimals	
C01-009	81,700	-	(10,000	+	)	=		/	.95	=		/	385	=	
C05-089	99,700	-	(18,000	+	)	=		/	.97	=		/	457	=	
F09-224	123,900	-	(30,000	+	)	=		/	.95	=		/	387	=	
011-067	93,000	-	(15,000	+	)	=		/	.98	=		/	448	=	
F12-018	131,500	-	(25,000	+	)	=		/	.97	=		/	457	=	
F03-026	132,000	-	(30,000	+	)	=		/	.95	=		/	436	=	
100-077	119,500	-	(20,000	+	)	=		/	.99	=		/	533	=	
F05-001	151,500	-	(22,500	+	)	=		/	.97	=		/	530	=	
056-089	106,500	-	(15,000	+	)	=		/	.98	=		/	484	=	
F03-005	148,000	-	(25,000	+	15,000)	=		/	.95	=		/	460	=	
Sum of Pt Cost																

6. Using the accessory schedules in the Appendix, calculate the value of an accessory improvement with the following criteria.

Characteristic	Value
Description	Boat House w/ Sun Deck
Size	12 x 20
Grade	120
Depreciation	75 % good
Other Factors	1.00

7. Using the accessory schedules in the Appendix, calculate the value of an accessory improvement with the following criteria.

Characteristic	Value
Description	Grain Storage Bin
Size	20 x 12
Grade	100
Depreciation	50 % good
Other Factors	1.00

8. **The Board of Assessors desire to modify accessory schedule values so the schedules represent actual dollars. Using the schedules in the Appendix and the fact that the new Accessory Point Cost should be \$250, modify the appropriate schedule items for Barn: Horse. The current point cost for accessories is \$200.**

9. Using the rural land schedules in the Appendix, calculate the value of a 9.35 acre small parcel with an accessibility /desirability code of 4D.

10. Using the Rural Land schedules in the Appendix, calculate the value of a 55.35 acre large tract that has an accessibility / desirability code of 2B. The composition of the tract is as follows:

Use Category	Productivity Rating	Acres
Open Land	2	10.00
Woodland	1	15.00
Woodland	4	10.35

11. The Board of Assessors desires to convert the small acre schedule from a tract basis to base value with accessibility / desirability factors. Make the necessary adjustments to the following schedule items using the schedules in the Appendix as the basis.

Schedule Item	Value
Rural Acre Break	
Rural Land – Small Parcel (Cls 1)	

Acres	Access	A	B	C	D	E
5.00	4					
6.00	4					

Appendix

Formulas

Adjusted Points Per Square Foot

The formula for using the base parameters can be found below:

$$\text{Adj PSF} = (\text{Base DSF}/100) * (((\text{Base Area} - \text{TBA}) / \text{Inc Base}) * \text{Inc Fact}) + 1.00$$

The portion of the formula that calculates an area multiplier, $((\text{Base Area} - \text{TBA}) / \text{Inc Base}) * \text{Inc Fact} + 1.00$, must be rounded to 6 decimal places. The value of **TBA** represents the total base area of the house.

Physical Depreciation

1. **Depr Increment** = $\text{abs}(\text{Depr from Lower Age Level} - \text{Depr from Higher Age Level})$
2. **Inc Factor** = $\text{Depr Inc} / \text{abs}(\text{Higher Age Level} - \text{Lower Age Level})$ {rnd to 2 dec}
3. **Depr Adj** = $(\text{Act Age} - \text{Lower Age Level}) * \text{Inc Factor}$ {rnd to 2 dec}
4. **Calc Dep** = $\text{Depr from Lower Age Level} - \text{Depr Adj}$

Residential Improvement Point Cost

$$\text{RESIDUAL IMPROVEMENT VALUE (RIV)} = \text{SALES PRICE} - (\text{LAND VALUE} + \text{OTHER VALUE})$$

$$\text{ADJ RIV} = \text{RIV} / \text{DEPRECIATION}$$

$$\text{POINT COST} = \text{ADJ RIV} / \text{ADJUSTED POINTS}$$

$$\text{RES IMP PT COST} = \text{SUM OF POINT COSTS} / \text{NUMBER OF SALES}$$

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

A. Base Pts									
Sty Ht		1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									5. Total Base Pts (0)
B. Heat Pts									
Sty Ht		6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									10. Total Heat Pts (0)
C. Bsmt Pts									
Opt = Desc									
11. TBA		12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)	
	X		=		X				=
Opt = Sq Ft									
16. Bsmt % Fin		17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)	
	X	()	+	()	X				=
D. Attic Pts									
Opt = Desc									
21. TBA		22. Attic PSF						23. Attic Pts (0)	
	X								=
Opt = Sq Ft									
24. Attic % Fin		25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)	
	X	()	+	()	X				=
		29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)	
E.			X		X				=
F.			X		X				=
G.			X		X				=
H.			X		X				=
I.			X		X				=
J.			X		X				=
K.			X		X				=
L.			X		X				=
M. Misc Items									
		33. # MI		34. Pts/Unit		35. Points			
			X		=		+		
			X				+		=
									36. Misc Items Pts (0)
O. Plumbing									
		37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix	
		()	X	()	+	()	X	()	=
									41. Plumbing Pts (0)
P. FMV									
		42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value	
			X		=		X		=
47. RCN		48. Phy%		49. Func%		50. Econ%		51. Comp%	
	X		X		X		X		=
53. Adj RCN		54. CD		55. Neighbd					
	X		X						56. FMV (0)

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (6)
((	-	)	/	)	X	)	+	1.000	=
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor	Adj PSF (6)
(	X	)	/	100	=		X		=
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(	X		X	)	/	100			=
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X		/	100					=
Area Mult		Attic D/SF							Attic PSF(6)
	X		/	100					=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(	X	)	/	100					=

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

A. Base Pts									
Sty Ht		1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									5. Total Base Pts (0)
B. Heat Pts									
Sty Ht		6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									10. Total Heat Pts (0)
C. Bsmt Pts									
Opt = Desc									
11. TBA		12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)	
	X		=		X				=
Opt = Sq Ft									
16. Bsmt % Fin		17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)	
	X	()	+	()	X				=
D. Attic Pts									
Opt = Desc									
21. TBA		22. Attic PSF						23. Attic Pts (0)	
	X								=
Opt = Sq Ft									
24. Attic % Fin		25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)	
	X	()	+	()	X				=
		29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)	
E.			X		X				=
F.			X		X				=
G.			X		X				=
H.			X		X				=
I.			X		X				=
J.			X		X				=
K.			X		X				=
L.			X		X				=
M. Misc Items									
		33. # MI		34. Pts/Unit		35. Points			
			X		=		+		
			X				+		=
									36. Misc Items Pts (0)
O. Plumbing									
		37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix	
		()	X	()	+	()	X	()	=
									41. Plumbing Pts (0)
P. FMV									
		42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value	
			X		=		X		=
47. RCN		48. Phy%		49. Func%		50. Econ%		51. Comp%	
	X		X		X		X		=
53. Adj RCN		54. CD		55. Neighbd					
	X		X						56. FMV (0)

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (6)
((	-	)	/	)	X	)	+	1.000	=
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor	Adj PSF (6)
(	X	)	/	100	=		X		=
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(	X		X	)	/	100			=
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X		/	100					=
Area Mult		Attic D/SF							Attic PSF(6)
	X		/	100					=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(	X	)	/	100					=

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

A. Base Pts									
Sty Ht	1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)		
		X		X		=		+	
		X		X		=		+	5. Total Base Pts (0)
		X		X		=		=	
B. Heat Pts									
Sty Ht	6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)		
		X		X		=		+	
		X		X		=		+	10. Total Heat Pts (0)
		X		X		=		=	
C. Bsmt Pts									
Opt = Desc									
11. TBA	12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)		
X		=	X					=	
Opt = Sq Ft									
16. Bsmt % Fin	17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)		
X	()	+	()	X				=	
D. Attic Pts									
Opt = Desc									
21. TBA	22. Attic PSF						23. Attic Pts (0)		
X								=	
Opt = Sq Ft									
24. Attic % Fin	25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)		
X	()	+	()	X				=	
	29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)		
E.		X		X				=	
F.		X		X				=	
G.		X		X				=	
H.		X		X				=	
I.		X		X				=	
J.		X		X				=	
K.		X		X				=	
L.		X		X				=	
M. Misc Items									
	33. # MI		34. Pts/Unit		35. Points		36. Misc Items Pts (0)		
		X		=		+			
		X				+		=	
O. Plumbing									
	37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix		41. Plumbing Pts (0)
	()	X	()	+	()	X	()	=	
P. FMV									
	42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value		46. RCN (0)
		X		=		X		=	
47. RCN	48. Phy%		49. Func%		50. Econ%		51. Comp%		52. Adj RCN (6)
X		X		X		X		=	
53. Adj RCN	54. CD		55. Neighbd						56. FMV (0)
X		X							

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (6)
((	-	)	/	)	X	)	+	1.000	=
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor	Adj PSF (6)
(	X	)	/	100	=		X		=
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(	X		X	)	/	100			=
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X		/	100					=
Area Mult		Attic D/SF							Attic PSF(6)
	X		/	100					=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(	X	)	/	100					=

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (1)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

A. Base Pts									
Sty Ht		1. Adj PSF		2. St Ht Adj		3. Sq Ft		4. Base Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									5. Total Base Pts (0)
B. Heat Pts									
Sty Ht		6. Sq Ft		7. Heat PSF		8. Sty Ht Adj		9. Heat Pts (0)	
			X		X		=		+
			X		X		=		+
			X		X		=		=
									10. Total Heat Pts (0)
C. Bsmt Pts									
Opt = Desc									
11. TBA		12. Bsmt PSF		13. Bsmt Pts		14. Fin Adj		15. Adj Bsmt Pts (0)	
	X		=		X				=
Opt = Sq Ft									
16. Bsmt % Fin		17. Bsmt Fin PSF		18. Bsmt PSF		19. Bsmt Area		20. Bsmt Pts (0)	
	X	()	+	()	X				=
D. Attic Pts									
Opt = Desc									
21. TBA		22. Attic PSF						23. Attic Pts (0)	
	X								=
Opt = Sq Ft									
24. Attic % Fin		25. Attic Fin PSF		26. Attic PSF		27. Attic Area		28. Attic Pts (0)	
	X	()	+	()	X				=
		29. Area		30. PSF		31. Sty Adj		32. Appendage Pts (0)	
E.			X		X				=
F.			X		X				=
G.			X		X				=
H.			X		X				=
I.			X		X				=
J.			X		X				=
K.			X		X				=
L.			X		X				=
M. Misc Items									
		33. # MI		34. Pts/Unit		35. Points			
			X		=		+		
			X				+		=
									36. Misc Items Pts (0)
O. Plumbing									
		37. # Std Comp		38. Pt/Cmp		39. # X-Fix		40. Pts/Fix	
		()	X	()	+	()	X	()	=
									41. Plumbing Pts (0)
P. FMV									
		42. Total Pts		43. Grade		44. Adj Pts (0)		45. Pt Value	
			X		=		X		=
47. RCN		48. Phy%		49. Func%		50. Econ%		51. Comp%	
	X		X		X		X		=
53. Adj RCN		54. CD		55. Neighbd					
	X		X						56. FMV (0)

RESIDENTIAL IMPROVEMENT CALCULATION WORKSHEET (2)

PIN: _____ Imp #: _____ TOTAL BASE AREA (TBA): _____

Q. Area Mult									
Base Area		TBA		Inc Base		Inc Fact			Area Mult (6)
((	-	)	/	)	X	)	+	1.000	=
R. Adj Base Pts per SF									
Area Mult		Base D/SF				Pts/SF (6)		Ext Wall Factor	Adj PSF (6)
(	X	)	/	100	=		X		=
S. Heat Pts per SF									
Area Mult		Heat D/SF		Heat Adj					Heat PSF (6)
(	X		X	)	/	100			=
T. Bsmt/Attic Pts per SF (Descriptive)									
Area Mult		Bsmt D/SF							Bsmt PSF (6)
	X		/	100					=
Area Mult		Attic D/SF							Attic PSF(6)
	X		/	100					=
U. Bsmt/Attic Pts per SF (Sq Ft)									
Base Area		Bsmt Area		Inc Base		Inc Fact			Bsmt Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Bsmt Area Mult		Full Bsmt D/SF							Bsmt PSF (6)
(	X	)	/	100					=
Base Area		Attic Area		Inc Base		Inc Fact			Attic Area Mult (3)
((	-	)	/	)	X	)	+	1.000	=
Attic Area Mult		Unfin Attic D/SF							Attic PSF (6)
(	X	)	/	100					=

WinGAP Manual Calculations - "Actual Dollars" Worksheet

Area Multiplier	Base Area	TBA	Inc Fact	Area Mult	Rnd			
Base	((((- /) + 1.000 =				2d			
Basement	((((- /) + 1.000 =				3d			
Attic	((((- /) + 1.000 =				3d			
Adj DSF1	Area Mult	Base Dollars		Adj DSF1				
	x			=	6d			
Adj DSF2	Adj DSF1	Ext Wall Fac	Occ Fact	Adj DSF2				
				=	6d			
Sum Adds	Area Mult	Add \$\$		Adj Adds				
Foundation	x			=	6d			
Roof	x			=	6d			
Roof Shape	x			=	6d			
Flr Cons	x			=	6d			
Flr Fin	x			=	6d			
Int Wall	x			=	6d			
Celing	x			=	6d			
Total Adds					6d			
Total DSF	Adj DSF2	Sum Adds		Total DSF	6d			
	+			=				
Base Value	Total DSF	Area	Sty Adj		Base Value			
Base 1	x	x			= 100			
Base 2	x	x			=			
Base 3	x	x			=			
Heat Value					Heat Value			
Base 1					= 100			
Base 2					=			
Base 3					=			
Bsmt Value	Bsmt Fin %	Fin Adj \$\$	Bsmt DSF	Area Mult	Bsmt Area	Qual Mult	Bsmt Value	
	((((- x) + ((x))) x						= 100	
Attic Value	Attic Fin %	Fin Adj \$\$	Attic DSF	Area Mult	Attic Area	Qual Mult	Attic Value	
	((((- x) + ((x))) x						= 100	
Append Value	Append DSF	Area	Sty Adj				Append	
App 1	x	x					= 100	
App 2	x	x					=	
App 3	x	x					=	
Misc Value	Lump Sum	# of Items					Misc	
Misc 1	x						= 100	
Misc 2	x						=	
Misc 3	x						=	
Plumbing	Std Comp \$	# of Std Comp					Plumbing	
	x						= 100	
	Extra Fix \$	# of Extra Fix						
	x						= 100	
Total Base								
RCN	Total Base	Grade					RCN	
	x						= 1	
FMV	RCN	Phy Dep	Func	Nbhd	Econ	Pct Comp	CDU	FMV
	x	x	x	x	x	x	x	=

WinGAP Manual Calculations - "Actual Dollars" Worksheet

Area Multiplier	Base Area	TBA	Inc Fact	Area Mult	Rnd			
Base	(((- /) + 1.000 =				2d			
Basement	(((- /) + 1.000 =				3d			
Attic	(((- /) + 1.000 =				3d			
Adj DSF1	Area Mult	Base Dollars		Adj DSF1				
	x			=	6d			
Adj DSF2	Adj DSF1	Ext Wall Fac	Occ Fact	Adj DSF2				
				=	6d			
Sum Adds	Area Mult	Add \$\$		Adj Adds				
Foundation	x			=	6d			
Roof	x			=	6d			
Roof Shape	x			=	6d			
Flr Cons	x			=	6d			
Flr Fin	x			=	6d			
Int Wall	x			=	6d			
Celing	x			=	6d			
Total Adds					6d			
Total DSF	Adj DSF2	Sum Adds		Total DSF	6d			
	+			=				
Base Value	Total DSF	Area	Sty Adj		Base Value			
Base 1	x	x			= 100			
Base 2	x	x			=			
Base 3	x	x			=			
Heat Value					Heat Value			
Base 1					= 100			
Base 2					=			
Base 3					=			
Bsmt Value	Bsmt Fin %	Fin Adj \$\$	Bsmt DSF	Area Mult	Bsmt Area	Qual Mult	Bsmt Value	
	(((x) + (x)) x						= 100	
Attic Value	Attic Fin %	Fin Adj \$\$	Attic DSF	Area Mult	Attic Area	Qual Mult	Attic Value	
	(((x) + (x)) x						= 100	
Append Value	Append DSF	Area	Sty Adj				Append	
App 1	x	x					= 100	
App 2	x	x					=	
App 3	x	x					=	
Misc Value	Lump Sum	# of Items					Misc	
Misc 1	x						= 100	
Misc 2	x						=	
Misc 3	x						=	
Plumbing	Std Comp \$	# of Std Comp					Plumbing	
	x						= 100	
	Extra Fix \$	# of Extra Fix						
	x						= 100	
Total Base								
RCN	Total Base	Grade					RCN	
	x						= 1	
FMV	RCN	Phy Dep	Func	Nbhd	Econ	Pct Comp	CDU	FMV
	x	x	x	x	x	x	x	=

10/16/03

Residential Improvements Pricing Schedule

1

Point Cost 100.00	Depr Year 2001
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<u>Item</u>	<u>ATTIC FIN ADJ</u>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		12.00	0	0.00

10/16/03

Residential Improvements Pricing Schedule

2

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

Item	ATTIC QUALITY	\$/Sq Ft	Lump Sum \$	Adj Factor
001	Excellent	0.000000	0	1.50
002	Good	0.000000	0	1.30
003	Average	0.000000	0	1.00
004	Fair	0.000000	0	0.90
005	Poor	0.000000	0	0.80

10/16/03

Residential Improvements Pricing Schedule

3

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<u>ATTIC TYPE</u>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
002	Finished	5.200000	0	0.00
003	Unfin	1.000000	0	0.00
004	Other	1.000000	0	0.00

10/16/03

Residential Improvements Pricing Schedule

4

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

<u>Item</u>	BASE AREA	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		0.000000	1500	0.00

10/16/03

Residential Improvements Pricing Schedule

5

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<i>BASE DOLLARS</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		40.000000	0	0.00

10/16/03

Residential Improvements Pricing Schedule

6

Point Cost	200.00	Depr Year	2001
-------------------	--------	------------------	------

Item	BASEMENT QUALITY	\$/Sq Ft	Lump Sum \$	Adj Factor
001	Excellent	0.000000	0	1.50
002	Good	0.000000	0	1.30
003	Average	0.000000	0	1.00
004	Fair	0.000000	0	0.90
005	Poor	0.000000	0	0.80

10/16/03

Residential Improvements Pricing Schedule

7

Point Cost	100.00	Depr Year	2001
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Item	BSMT COVERAGE	\$/Sq Ft	Lump Sum \$	Adj Factor
002	Part	1.100000	0	0.00
003	Half	1.600000	0	0.00
004	Full	4.000000	0	0.00
005	Other Bsmt	1.000000	0	0.00

10/16/03

Residential Improvements Pricing Schedule

8

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

<u>Item</u>	<i>BSMT FIN ADJ</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		12.00	0	0.00

10/16/03

Residential Improvements Pricing Schedule

9

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

Item	BSMT FINISH	\$/Sq Ft	Lump Sum \$	Adj Factor
002	Unfin	0.000000	0	1.00
003	Full Fin	0.000000	0	3.00
004	Part Fin	0.000000	0	2.00
005	Other	0.000000	0	1.00

Residential Improvements Pricing Schedule

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

Item	EXTERIOR WALLS	\$/Sq Ft	Lump Sum \$	Adj Factor
001	Masonry	0.000000	0	1.00
002	Wood	0.000000	0	0.93
003	Masonry/Wd	0.000000	0	0.97
004	Conc Blk	0.000000	0	0.95
005	Stucco	0.000000	0	0.97
006	Stucco/Mas	0.000000	0	1.00
007	Alum/Vinyl Sid	0.000000	0	0.97
008	Masonite/Asbest	0.000000	0	0.95
009	Other	0.000000	0	1.05
011	HardiBoard	0.000000	0	1.10

Residential Improvements Pricing Schedule

Point Cost	100.00	Depr Year	2001
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Item	FIREPLACE	\$/Sq Ft	Lump Sum \$	Adj Factor
001	1 Sty Prefab	0.000000	900	0.00
002	2 Sty Prefab	0.000000	900	0.00
003	1 Sty/1 Box Const	0.000000	1000	0.00
004	2 Sty/1 Box Const	0.000000	1300	0.00
005	1 Sty/2 Box Const	0.000000	1600	0.00
006	2 Sty/2 Box Const	0.000000	1900	0.00
007	2 Sty/4 Box Const	0.000000	2300	0.00
009	Sink	0.000000	200	0.00
010	Shower	0.000000	800	0.00
011	1 Stry Massive with stone work	0.000000	3000	0.00
012	2 Stry Massive	0.000000	4500	0.00

Residential Improvements Pricing Schedule

Point Cost	100.00	Depr Year	2001
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Item	HEAT	\$/Sq Ft	Lump Sum \$	Adj Factor
001	Cent Heat/AC	0.000000	0	1.90
002	Cent Heat	0.000000	0	1.00
003	Cent AC	0.000000	0	1.00
004	Flr/Wall Furn	0.000000	0	0.40
005	Steam	0.000000	0	1.90
006	Baseboard	0.000000	0	0.75
008	Flr/W Furn w/ AC	0.000000	0	1.40
009	Bsbd w/ AC	0.000000	0	1.75
010	Steam w/ AC	0.000000	0	2.90
011	Solar w/ AC	0.000000	0	2.10
012	Thermal	0.000000	0	0.92
013	Heat Pump	0.000000	0	0.77

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Residential Improvements Pricing Schedule

13

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<i>HEAT DOLLARS</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		1.30	0	0.00

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Residential Improvements Pricing Schedule

14

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<i>INC BASE</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		50.00	0	0.00

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Residential Improvements Pricing Schedule

15

Point Cost	100.00	Depr Year	2001
-------------------	--------	------------------	------

<u>Item</u>	<i>INC FACTOR</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		0.005000	0	0.00

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Residential Improvements Pricing Schedule

16

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<i>MAX AREA</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		0.000000	3000	0.00

10/16/03

Residential Improvements Pricing Schedule

17

Point Cost	100.00	Depr Year	2001
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<u>Item</u>	<i>MIN AREA</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
		0.000000	500	0.00

10/16/03

Residential Improvements Pricing Schedule

18

Point Cost	200.00	Depr Year	2001
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<u>Item</u>	<i>PLUMBING</i>	<u>\$/Sq Ft</u>	<u>Lump Sum \$</u>	<u>Adj Factor</u>
001	Standard Complement	0.000000	2200	0.00
002	Extra Fixtures	0.000000	400	0.00

10/16/03

WinGAP Residential Improvement Depreciation Table

1

Grade	Age	Excellent	Good	Average	Fair	Poor
1.10	1	1.00	0.99	0.99	0.97	0.94
1.10	2	0.99	0.98	0.98	0.96	0.93
1.10	3	0.98	0.97	0.97	0.95	0.92
1.10	4	0.97	0.96	0.96	0.94	0.91
1.10	5	0.98	0.96	0.95	0.94	0.87
1.10	6	0.97	0.95	0.93	0.92	0.85
1.10	7	0.96	0.94	0.92	0.91	0.84
1.10	8	0.94	0.93	0.91	0.90	0.83
1.10	9	0.93	0.91	0.90	0.89	0.82
1.10	10	0.92	0.90	0.89	0.87	0.81
1.10	11	0.91	0.89	0.87	0.86	0.79
1.10	12	0.90	0.88	0.86	0.85	0.78
1.10	13	0.89	0.87	0.85	0.81	0.73
1.10	14	0.87	0.85	0.83	0.79	0.71
1.10	15	0.85	0.83	0.81	0.77	0.69
1.10	16	0.83	0.81	0.79	0.75	0.67
1.10	17	0.81	0.79	0.77	0.73	0.65
1.10	18	0.79	0.77	0.75	0.71	0.63

10/16/03

WinGAP Residential Improvement Depreciation Table

2

Grade	Age	Excellent	Good	Average	Fair	Poor
1.10	19	0.77	0.75	0.73	0.69	0.61
1.10	20	0.75	0.73	0.71	0.67	0.59
1.10	21	0.77	0.73	0.70	0.66	0.55
1.10	22	0.76	0.73	0.69	0.65	0.54
1.10	23	0.76	0.72	0.69	0.65	0.54
1.10	24	0.75	0.72	0.68	0.64	0.53
1.10	25	0.74	0.71	0.68	0.64	0.53

10/16/03

WinGAP Residential Improvement Depreciation Table

3

Grade	Age	Excellent	Good	Average	Fair	Poor
1.35	1	1.03	1.02	1.01	0.99	0.94
1.35	2	1.02	1.01	1.00	0.98	0.93
1.35	3	1.01	1.00	0.99	0.97	0.92
1.35	4	1.00	0.99	0.98	0.96	0.91
1.35	5	1.00	0.98	0.97	0.95	0.88
1.35	6	0.99	0.97	0.95	0.93	0.86
1.35	7	0.98	0.96	0.94	0.92	0.85
1.35	8	0.96	0.94	0.93	0.91	0.84
1.35	9	0.95	0.93	0.92	0.90	0.83
1.35	10	0.94	0.92	0.91	0.89	0.82
1.35	11	0.93	0.91	0.89	0.87	0.80
1.35	12	0.92	0.90	0.88	0.86	0.79
1.35	13	0.90	0.84	0.86	0.82	0.74
1.35	14	0.88	0.82	0.84	0.80	0.72
1.35	15	0.86	0.80	0.82	0.78	0.70
1.35	16	0.84	0.78	0.80	0.76	0.68
1.35	17	0.82	0.76	0.78	0.74	0.66
1.35	18	0.80	0.74	0.76	0.72	0.64

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WinGAP Residential Improvement Depreciation Table

4

<u>Grade</u>	<u>Age</u>	<u>Excellent</u>	<u>Good</u>	<u>Average</u>	<u>Fair</u>	<u>Poor</u>
1.35	19	0.78	0.72	0.74	0.70	0.62
1.35	20	0.76	0.70	0.72	0.68	0.60
1.35	21	0.77	0.74	0.72	0.68	0.57
1.35	22	0.76	0.74	0.71	0.67	0.56
1.35	23	0.76	0.73	0.71	0.67	0.56
1.35	24	0.75	0.73	0.70	0.66	0.55
1.35	25	0.74	0.72	0.70	0.66	0.55

Sketching Labels & Associated Cost/Factors

Bldg Type	Label	Description	Pts per Sq	Cost	Area	Label Type
Residential	Add	Addition	0.165000	1.0000	1.0000	Addition
Residential	BP	Brick Porch	0.150000	1.0000	1.0000	Appendage
Residential	Carp	Carport	0.099000	1.0000	1.0000	Appendage
Residential	EP	Enclosed Porch	0.132000	1.0000	1.0000	Appendage
Residential	EP.F	Enclosed Porch	0.100000	1.0000	1.0000	Appendage
Residential	Gar	Garage	0.115500	1.0000	1.0000	Appendage
Residential	GarD	Garage w/ Door	22.000000	1.0000	1.0000	Appendage
Residential	OP	Open Porch	0.099000	1.0000	1.0000	Appendage
Residential	Pat	Patio	0.016500	1.0000	1.0000	Appendage
Residential	SP	Screen Porch	0.076000	1.0000	1.0000	Appendage
Residential	Terr	Terrace	0.025000	1.0000	1.0000	Appendage
Residential	Util	Utility Room	0.115500	1.0000	1.0000	Appendage
Residential	Deck	Wood Deck	0.120000	1.0000	1.0000	Appendage
Residential	2nd	Second Story	0.000000	1.0000	1.0000	Interior
Residential	1st	1 Story	0.000000	1.0000	1.0000	Primary
Residential	1.5s	1.5 Story	0.000000	1.5000	1.5000	Primary
Residential	2st	2 Story	0.000000	1.8000	2.0000	Primary
Residential	3.5s	3.5 Story	0.000000	1.5000	3.5000	Primary

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Accessory Base Schedule

Description	Comp #	Method	TBL #	Cost
Air Strip	A	Lump Sum	50	See Lump Sum Tables
Barn	A	Sq Ft		48.00
Barn With Loft	A	Sq Ft		15.60
Barn: Horse	A	Sq Ft		14.80
Bath House	A	Sq Ft		20.00
Bird Shelters/Feeders	A	Lump Sum	57	See Lump Sum Tables
Boat and Swim Dock	A	Sq Ft		12.00
Boat Dock on Piers	A	Sq Ft		12.00
Boat House with Sun Deck	A	Sq Ft		25.20
Boat Hse: Metal Ext-Styro Flts	A	Sq Ft		18.00
Boat Ramp: Concrete	A	Lump Sum	12	See Lump Sum Tables
Boat Slip: No Roof	A	Sq Ft		7.20
Boat Slip: With Roof	A	Sq Ft		18.00
Canopy/Hay Shed/Pole Barn	A			
Car Canopy	A	Sq Ft		7.20
Cattle Shelter	A	Sq Ft		19.00
Comm. Fence: Chain Link	A	Lump Sum	75	See Lump Sum Tables
Cookout w/Pit Brick or Conc.	A	Sq Ft		12.00
Dairy Barn	A	Sq Ft		30.00
Detached Carport	A	Sq Ft		12.00
Detached Deck(Wood)	A	Sq Ft		10.20
Detached Egg Room	A	Sq Ft		22.00
Detached Garage	A	Sq Ft		20.00
Driveway	A	Lump Sum	80	See Lump Sum Tables
Equip Shed/Imp Shed	A	Sq Ft		5.00
Exotic Bird Incub/Hatching Bld	A	Sq Ft		16.00
Garage w/Door	A	Sq Ft		36.00
Grain Bin Holding	A	Lump Sum	2	See Lump Sum Tables
Grain Storage Bin	A	Lump Sum	1	See Lump Sum Tables
Industrial Tanks	A	Sq Ft		20.00

Description	Comp #	Method	TBL #	Cost
Kennel	A	Sq Ft		16.00
L/T	A	Sq Ft		2.00
Mineral Rights	A	Lump Sum	77	See Lump Sum Tables
No Value	A	Lump Sum		
Paving: Asphalt	A	Sq Ft		2.00
Paving: Concrete	A	Sq Ft		3.00
Poultry House Boiler Curtain	A	Sq Ft		2.60
Poultry Hse Boiler Enclosed	A	Sq Ft		4.40
Poultry Hse Ctn Layr No Egg Rm	A	Sq Ft		3.20
Poultry Hse Layer Curtain	A	Sq Ft		3.80
Poultry Hse Layer Enclosed	A	Sq Ft		5.00
Rail Siding	A	Sq Ft		20.00
Railroad Spurs	A	Sq Ft		20.00
Res. Fence Brick	A	Lump Sum	72	See Lump Sum Tables
Res. Fence Chain Link	A	Lump Sum	70	See Lump Sum Tables
Res. Fence Concrete Block	A	Lump Sum	73	See Lump Sum Tables
Res. Fence Wood	A	Lump Sum	71	See Lump Sum Tables
Res. Greenhouse Glass Fibergla	A	Sq Ft		16.20
Res. Greenhouse Polyethelene	A	Sq Ft		4.00
Res. Swimming Pool: Alum or St	A	Sq Ft		20.00
Res. Swimming Pool: Fiberglass	A	Sq Ft		19.00
Res. Swimming Pool: Gunite	A	Sq Ft		24.00
Res. Swimming Pool: Poured Con	A	Sq Ft		19.00
Res. Swimming Pool: Vinyl	A	Sq Ft		12.00
Res. Tennis Court: Asphalt	A	Sq Ft		2.80
Res. Tennis Court: Clay	A	Sq Ft		2.00
Res. Tennis Court: Concrete	A	Sq Ft		3.60
Security Gate	A	Lump Sum	37	See Lump Sum Tables
Septic Tank (No Well)	A	Lump Sum	52	See Lump Sum Tables
Shop or Machinery Bldg.	A	Sq Ft		13.00
Shop or Machinery Bldg. Prefab	A	Sq Ft		11.00

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Accessory Base Schedule

Description	Comp #	Method	TBL #	Cost
Silo: Concrete Stave	A	Lump Sum	4	See Lump Sum Tables
Silo: Poured Conc Krop Keep	A	Lump Sum	6	See Lump Sum Tables
Silo: Poured Concrete	A	Lump Sum	5	See Lump Sum Tables
Silo: Steel Lined	A	Lump Sum	3	See Lump Sum Tables
Swine Farrowing Bldg.	A	Sq Ft		20.00
Swine Finishing Bldg.	A	Sq Ft		14.00
Swine Finishing Slab	A	Sq Ft		2.60
Swine Gestation Bldg.	A	Sq Ft		16.00
Swine Nursery Bldg.	A	Sq Ft		26.00
Tobacco Barn	A	Sq Ft		20.00
Tobacco Barn Bulk on Conc Slab	A	Sq Ft		38.00
Trailer Spaces	A	Lump Sum	82	See Lump Sum Tables
Truck Scales	A	Sq Ft		20.00
Utility Bldg/Shed	A	Sq Ft		40.00
Well & Septic Tank	A	Lump Sum	50	See Lump Sum Tables
Well (No Septic Tank)	A	Lump Sum	51	See Lump Sum Tables

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Accessory Tables

1

Descrip	Comp #	Type	Table	Dimension 1 (Len, Width, Hght)	Dimension 2 (Len, Width, Hght)	Cost
Air Strip	2000	A	50	1	0	2500.00
Bird Shelters/Feeders	0057	A	57	8	8	200.00
				10	10	300.00
Boat Ramp: Concrete	0120	A	12	1	0	1.40
				2	0	1.10
Comm. Fence: Chain Link	1050	A	75	6	0	5.40
				8	0	7.60
				10	0	10.20
				12	0	12.50
Driveway	0013	A	80	1	0	1.10
				2	0	0.60
				3	0	1.70
				6	0	12.00
				8	0	16.00
				10	0	20.00
				12	0	24.00
Grain Bin Holding	0014	A	2	3	0	660.00
				4	0	760.00
				6	0	860.00
				7	0	960.00
				10	0	1780.00
				13	0	1910.00
				17	0	2050.00
				20	0	2200.00
				23	0	2350.00
				26	0	3800.00
				32	0	4030.00
				38	0	4350.00
				44	0	4610.00
				50	0	5000.00

10/18/03

Accessory Tables

2

Descrip	Comp #	Type	Table	Dimension 1 (Len, Width, Hght)	Dimension 2 (Len, Width, Hght)	Cost
				58	0	5330.00
				62	0	5530.00
				68	0	5890.00
Grain Storage Bin	0015	A	1			
				15	7	58000.00
				15	11	1894.00
				15	15	2408.00
				15	18	2877.00
				18	11	2439.00
				18	15	2958.00
				18	18	3332.00
				18	22	3961.00
				18	26	4702.00
				21	11	3386.00
				21	15	3728.00
				21	18	4147.00
				21	22	4794.00
				21	26	5387.00
				24	11	4088.00
				24	15	4534.00
				24	18	5088.00
				24	22	5973.00
				24	26	6797.00
				27	11	5246.00
				27	15	5742.00
				27	18	6300.00
				27	22	7083.00
				27	26	7973.00
				30	15	6859.00
				30	18	7429.00
				30	22	8345.00
				30	26	9657.00
				38	15	9883.00
				38	18	10178.00
				38	22	11579.00

10/18/03

Accessory Tables

3

Descrip	Comp #	Type	Table	Dimension 1 (Len, Width, Hght)	Dimension 2 (Len, Width, Hght)	Cost
				42	15	13917.00
				42	18	15115.00
				42	22	17201.00
				48	15	17947.00
				48	18	19626.00
				60	18	28623.00
Mineral Rights	MINR	A	77			
				0	0	0.49
Res. Fence Brick	0016	A	72			
				4	0	17.60
				6	0	26.40
				8	0	35.20
Res. Fence Chain Link	0017	A	70			
				1	0	4.00
				4	0	4.00
				6	0	5.00
				8	0	6.60
				10	0	8.30
				12	0	10.20
Res. Fence Concrete Block	0018	A	73			
				4	0	10.00
				6	0	13.50
				8	0	17.60
				10	0	22.50
				12	0	27.00
Res. Fence Wood	0019	A	71			
				5	0	4.50
				6	0	4.80
				8	0	6.30
				10	0	8.00
				12	0	9.80

10/18/03

Rural Land Valuation Schedule

Code	Description	Class 1 \$/Ac	Class 2 \$/Ac	Class 3 \$/Ac	Class 4 \$/Ac	Class 5 \$/Ac	Class 6 \$/Ac	C
1	Open Land	1200	1168	1000	922	860	0	
2	Orchards	2400	1872	1172	0	0	0	
3	Ponds	2000	1600	1172	0	0	0	
4	Woodland	1520	630	2000	442	254	0	
5	Small Parcel	2	0	0	0	0	0	
6	Homesite	0	0	0	0	0	0	
7	Wasteland	0	0	0	0	0	0	
8	Pasture	0	0	0	0	0	0	

AD Codes

Acres		1	2	3	4	5	6
1.00	A	6500.0000	5500.0000	4500.0000	4200.0000	4100.0000	0.0000
	B	6000.0000	5000.0000	4300.0000	4150.0000	4000.0000	0.0000
	C	5500.0000	4200.0000	3800.0000	3750.0000	3700.0000	0.0000
	D	5000.0000	4165.0000	3500.0000	3450.0000	3430.0000	0.0000
	E	4500.0000	3920.0000	3350.0000	3300.0000	3200.0000	0.0000
Acres		1	2	3	4	5	6
2.00	A	12446.0000	10000.0000	8900.0000	8200.0000	8000.0000	0.0000
	B	11800.0000	9800.0000	8400.0000	8100.0000	7800.0000	0.0000
	C	10000.0000	8300.0000	7500.0000	7400.0000	7300.0000	0.0000
	D	9800.0000	8104.0000	5900.0000	6800.0000	6664.0000	0.0000
	E	8800.0000	7614.0000	5800.0000	6500.0000	6200.0000	0.0000
Acres		1	2	3	4	5	6
3.00	A	18258.0000	14400.0000	13200.0000	12150.0000	11700.0000	0.0000
	B	17400.0000	13200.0000	12495.0000	12000.0000	11400.0000	0.0000
	C	13500.0000	12300.0000	8100.0000	10950.0000	10800.0000	0.0000
	D	13200.0000	11817.0000	6900.0000	10050.0000	9702.0000	0.0000
	E	12900.0000	11082.0000	6600.0000	9600.0000	9000.0000	0.0000
Acres		1	2	3	4	5	6
4.00	A	23756.0000	19100.0000	17400.0000	16000.0000	15200.0000	0.0000
	B	22800.0000	17200.0000	16168.0000	15800.0000	14800.0000	0.0000
	C	17800.0000	16000.0000	14600.0000	14400.0000	14200.0000	0.0000
	D	17200.0000	13008.0000	13400.0000	13200.0000	12544.0000	0.0000
	E	16800.0000	12600.0000	12500.0000	12400.0000	11800.0000	0.0000
Acres		1	2	3	4	5	6
5.00	A	28960.0000	23750.0000	21500.0000	19750.0000	18500.0000	0.0000
	B	28000.0000	21000.0000	19400.0000	19375.0000	18000.0000	0.0000
	C	21700.0000	15500.0000	18000.0000	17750.0000	12250.0000	0.0000
	D	21000.0000	14950.0000	15000.0000	14750.0000	11750.0000	0.0000
	E	20500.0000	14500.0000	14250.0000	14000.0000	11250.0000	0.0000

AD Codes

Acres		1	2	3	4	5	6
6.00	A	33870.0000	28200.0000	25500.0000	23400.0000	21600.0000	0.0000
	B	33000.0000	24600.0000	22500.0000	22200.0000	21000.0000	0.0000
	C	25920.0000	18000.0000	21300.0000	21000.0000	14400.0000	0.0000
	D	24600.0000	17880.0000	17700.0000	17400.0000	13800.0000	0.0000
	E	24000.0000	17100.0000	16800.0000	16500.0000	13200.0000	0.0000
Acres		1	2	3	4	5	6
7.00	A	38486.0000	30100.0000	29400.0000	26950.0000	24500.0000	0.0000
	B	37800.0000	28000.0000	25900.0000	25550.0000	23800.0000	0.0000
	C	30100.0000	20860.0000	24500.0000	24150.0000	17150.0000	0.0000
	D	28000.0000	20790.0000	20300.0000	19950.0000	15925.0000	0.0000
	E	27300.0000	19460.0000	19250.0000	18900.0000	15050.0000	0.0000
Acres		1	2	3	4	5	6
8.00	A	42808.0000	34240.0000	31600.0000	30400.0000	27200.0000	0.0000
	B	33000.0000	31600.0000	29200.0000	28800.0000	26400.0000	0.0000
	C	32880.0000	23760.0000	27600.0000	27200.0000	19200.0000	0.0000
	D	31600.0000	23680.0000	22800.0000	22400.0000	18000.0000	0.0000
	E	30400.0000	22160.0000	21600.0000	21200.0000	16800.0000	0.0000
Acres		1	2	3	4	5	6
9.00	A	47700.0000	36900.0000	33750.0000	33525.0000	29700.0000	0.0000
	B	46800.0000	35100.0000	32400.0000	31950.0000	28800.0000	0.0000
	C	36900.0000	26640.0000	30600.0000	30150.0000	21150.0000	0.0000
	D	35100.0000	26550.0000	25200.0000	24750.0000	20025.0000	0.0000
	E	33300.0000	24840.0000	23850.0000	23400.0000	19800.0000	0.0000
Acres		1	2	3	4	5	6
10.00	A	51500.0000	40900.0000	37000.0000	36750.0000	30000.0000	0.0000
	B	51000.0000	38500.0000	35500.0000	35000.0000	29000.0000	0.0000
	C	40900.0000	29500.0000	33500.0000	30000.0000	23000.0000	0.0000
	D	38500.0000	29400.0000	27500.0000	27000.0000	22000.0000	0.0000
	E	36000.0000	27500.0000	26000.0000	25500.0000	21500.0000	0.0000

**AD Codes –
Large Tracts**

Acres		1	2	3	4	5	6	7
30.00	A	4.5300	3.5100	2.7200	2.1200	1.6400	1.2700	0.9800
	B	3.0600	2.3700	1.8400	1.4300	1.1000	0.8600	0.6600
	C	2.0500	1.5900	1.2300	0.9600	0.7400	0.5700	0.4400
	D	1.3800	1.0700	0.8300	0.6400	0.5000	0.3800	0.3000
	E	0.9300	0.7200	0.5600	0.4300	0.3400	0.2600	0.2000
Acres		1	2	3	4	5	6	7
32.00	A	4.5000	3.4900	2.7100	2.1000	1.6300	1.2600	0.9800
	B	3.0400	2.3600	1.8300	1.4200	1.1000	0.8500	0.6600
	C	2.0400	1.5800	1.2300	0.9500	0.7400	0.5700	0.4400
	D	1.3700	1.0600	0.8300	0.6400	0.5000	0.3800	0.3000
	E	0.9200	0.7100	0.5500	0.4300	0.3300	0.2600	0.2000
Acres		1	2	3	4	5	6	7
34.00	A	4.4700	3.4600	2.6900	2.0900	1.6100	1.2600	0.9800
	B	3.0200	2.3400	1.8200	1.4100	1.0900	0.8500	0.6600
	C	2.0300	1.5700	1.2200	0.9400	0.7300	0.5700	0.4400
	D	1.3600	1.0500	0.8200	0.6300	0.5000	0.3800	0.3000
	E	0.9100	0.7100	0.5500	0.4200	0.3300	0.2600	0.2000
Acres		1	2	3	4	5	6	7
36.00	A	4.4400	3.4500	2.6600	2.0700	1.6000	1.2400	0.9600
	B	3.0000	2.3300	1.8000	1.4000	1.8000	0.8400	0.6500
	C	2.0100	1.5600	1.2100	0.9400	0.7300	0.5600	0.4400
	D	1.3500	1.0500	0.8100	0.6300	0.5000	0.3800	0.3000
	E	0.9100	0.7000	0.5400	0.4200	0.3300	0.2600	0.2000
Acres		1	2	3	4	5	6	7
38.00	A	4.4100	3.4200	2.6500	2.6000	1.6000	1.2300	0.9600
	B	2.9800	2.3100	1.7900	1.3900	1.0800	0.8300	0.6500
	C	2.0000	1.5500	1.2000	0.9300	0.7200	0.5600	0.4300
	D	1.3400	1.0400	0.8100	0.6200	0.4800	0.3800	0.2900
	E	0.9000	0.7000	0.5400	0.4200	0.3200	0.2600	0.1900
Acres		1	2	3	4	5	6	7
40.00	A	4.3800	3.4000	2.6300	2.0400	1.5800	1.2300	0.9500
	B	2.9600	2.3000	1.7800	1.3800	1.0700	0.8300	0.6400
	C	1.9900	1.5400	1.1900	0.9200	0.7200	0.5600	0.4300
	D	1.3400	1.0300	0.7900	0.6200	0.4800	0.3800	0.2900
	E	0.9000	0.6900	0.5300	0.4200	0.3200	0.2600	0.1900

**AD Codes –
Large Tracts**

Acres		1	2	3	4	5	6	7
42.00	<input type="checkbox"/> A	4.3500	3.3700	2.6200	2.0300	1.5700	1.2100	0.9500
	<input type="checkbox"/> B	2.9400	2.2800	1.7700	1.3700	1.0600	0.8200	0.6400
	<input type="checkbox"/> C	1.9700	1.5300	1.1800	0.9200	0.7100	0.5500	0.4000
	<input type="checkbox"/> D	1.3200	1.0300	0.7900	0.6200	0.4800	0.3700	0.2900
	<input type="checkbox"/> E	0.8000	0.6900	0.5300	0.4200	0.3200	0.2500	0.1000
Acres		1	2	3	4	5	6	7
44.00	<input type="checkbox"/> A	4.3200	3.3600	2.6000	2.0100	1.5500	1.2100	0.9300
	<input type="checkbox"/> B	2.9200	2.2700	1.7600	1.3600	1.0500	0.8200	0.6300
	<input type="checkbox"/> C	1.9600	1.5200	1.1800	0.9100	0.7100	0.5500	0.4200
	<input type="checkbox"/> D	1.3200	1.0200	0.7900	0.6100	0.4800	0.3700	0.2800
	<input type="checkbox"/> E	0.8900	0.6800	0.5300	0.4100	0.3200	0.2500	0.1900
Acres		1	2	3	4	5	6	7
46.00	<input type="checkbox"/> A	4.2900	3.3300	2.5800	2.0000	1.5500	1.2000	0.9300
	<input type="checkbox"/> B	2.9000	2.2500	1.7400	1.3500	1.0500	0.8100	0.6300
	<input type="checkbox"/> C	1.9500	1.5100	1.1700	0.9100	0.7000	0.5400	0.4200
	<input type="checkbox"/> D	1.3200	1.0100	0.7900	0.6100	0.4700	0.3600	0.2800
	<input type="checkbox"/> E	0.8900	0.6800	0.5300	0.4100	0.3200	0.2400	0.1900
Acres		1	2	3	4	5	6	7
48.00	<input type="checkbox"/> A	4.2600	3.3200	2.5600	1.9800	1.5400	1.2000	0.9300
	<input type="checkbox"/> B	2.8800	2.2400	1.7300	1.3400	1.0000	0.8100	0.6300
	<input type="checkbox"/> C	1.9300	1.5000	1.1600	0.9000	0.7000	0.5400	0.4200
	<input type="checkbox"/> D	1.3000	1.0100	0.7800	0.6000	0.4700	0.3600	0.2800
	<input type="checkbox"/> E	0.8700	0.6800	0.5200	0.4000	0.3200	0.2400	0.1900
Acres		1	2	3	4	5	6	7
50.00	<input type="checkbox"/> A	4.2300	3.2900	2.5500	1.9700	1.5200	1.1800	0.9200
	<input type="checkbox"/> B	2.8600	2.2200	1.7200	1.3300	1.0300	0.8000	0.6200
	<input type="checkbox"/> C	1.9200	1.4900	1.1500	0.8900	0.6900	0.5400	0.4200
	<input type="checkbox"/> D	1.2900	1.0000	0.7800	0.6000	0.4600	0.3600	0.2800
	<input type="checkbox"/> E	0.8700	0.6700	0.5200	0.4000	0.3100	0.2400	0.1900
Acres		1	2	3	4	5	6	7
52.00	<input type="checkbox"/> A	4.2000	3.2600	2.5300	1.9500	1.5200	1.1800	0.9200
	<input type="checkbox"/> B	2.8400	2.2000	1.7100	1.3200	1.0300	0.8000	0.6200
	<input type="checkbox"/> C	1.9100	1.4800	1.1400	0.8900	0.6900	0.5300	0.4100
	<input type="checkbox"/> D	1.2800	0.9900	0.7700	0.6000	0.4600	0.3600	0.2800
	<input type="checkbox"/> E	0.8600	0.6600	0.5200	0.4000	0.3100	0.2400	0.1900

**AD Codes –
Large Tracts**

Acres		1	2	3	4	5	6	7
54.00	<input type="checkbox"/> A	4.1700	3.2400	2.5200	1.9400	1.5100	1.1700	0.9000
	<input type="checkbox"/> B	2.8200	2.1900	1.7000	1.3100	1.0200	0.7900	0.6100
	<input type="checkbox"/> C	1.8900	1.4700	1.1400	0.8800	0.6800	0.5300	0.4100
	<input type="checkbox"/> D	1.2700	0.9900	0.7700	0.5900	0.4600	0.3600	0.2800
	<input type="checkbox"/> E	0.8500	0.6600	0.5200	0.4000	0.3100	0.2400	0.1900
Acres		1	2	3	4	5	6	7
56.00	<input type="checkbox"/> A	4.1400	3.2100	2.4900	1.9400	1.4900	1.1500	0.9000
	<input type="checkbox"/> B	2.8000	2.1700	1.6800	1.3100	1.0100	0.7800	0.6100
	<input type="checkbox"/> C	1.8800	1.4600	1.1300	0.8700	0.6800	0.5300	0.4100
	<input type="checkbox"/> D	1.2600	0.9800	0.7600	0.5800	0.4600	0.3600	0.2800
	<input type="checkbox"/> E	0.8500	0.6600	0.5100	0.3900	0.3100	0.2400	0.1900
Acres		1	2	3	4	5	6	7
58.00	<input type="checkbox"/> A	4.1100	3.2000	2.4700	1.9200	1.4800	1.1500	0.8900
	<input type="checkbox"/> B	2.7800	2.6200	1.6700	1.3000	1.0000	0.7800	0.6000
	<input type="checkbox"/> C	1.8700	1.4500	1.1200	0.8700	0.6700	0.5200	0.4000
	<input type="checkbox"/> D	1.2600	0.9700	0.7500	0.5800	0.4500	0.3500	0.2700
	<input type="checkbox"/> E	0.8500	0.6500	0.5000	0.3900	0.3000	0.2300	0.1800
Acres		1	2	3	4	5	6	7
60.00	<input type="checkbox"/> A	4.0800	3.1700	2.4600	1.9100	1.4800	1.1400	0.8900
	<input type="checkbox"/> B	2.7600	2.1400	1.6600	1.2900	1.0000	0.7700	0.6000
	<input type="checkbox"/> C	1.8500	1.4400	1.1100	0.8600	0.6700	0.5200	0.4000
	<input type="checkbox"/> D	1.2500	0.9700	0.7400	0.5800	0.4500	0.3500	0.2700
	<input type="checkbox"/> E	0.8400	0.6500	0.5000	0.3900	0.3000	0.2300	0.1800
Acres		1	2	3	4	5	6	7
62.00	<input type="checkbox"/> A	4.0600	3.1500	2.4400	1.8800	1.4700	1.1400	0.8700
	<input type="checkbox"/> B	2.7400	2.1300	1.6500	1.2800	0.9900	0.7700	0.5900
	<input type="checkbox"/> C	1.8400	1.4200	1.1000	0.8600	0.6600	0.5100	0.4000
	<input type="checkbox"/> D	1.2300	0.9500	0.7400	0.5800	0.4400	0.3400	0.2700
	<input type="checkbox"/> E	0.8300	0.6400	0.5000	0.3900	0.3000	0.2300	0.1800
Acres		1	2	3	4	5	6	7
64.00	<input type="checkbox"/> A	4.0300	3.1200	2.4300	1.8800	1.4500	1.1200	0.8700
	<input type="checkbox"/> B	2.7200	2.1100	1.6400	1.2700	0.9800	0.7600	0.5900
	<input type="checkbox"/> C	1.8300	1.4100	1.1000	0.8500	0.6600	0.5100	0.4000
	<input type="checkbox"/> D	1.2300	0.9500	0.7400	0.5700	0.4400	0.3400	0.2700
	<input type="checkbox"/> E	0.8300	0.6400	0.5000	0.3800	0.3000	0.2300	0.1800

**AD Codes –
Large Tracts**

Acres		1	2	3	4	5	6	7
66.00	A	4.0000	3.1100	2.4000	1.8600	1.4500	1.1200	0.8700
	B	2.7000	2.1000	1.6200	1.2600	0.9800	0.7600	0.5900
	C	1.8100	1.4000	1.0900	0.8400	0.6500	0.5100	0.3900
	D	1.2100	0.9400	0.7300	0.5600	0.4400	0.3400	0.2600
	E	0.8100	0.6300	0.4900	0.3800	0.3000	0.2300	0.1700
Acres		1	2	3	4	5	6	7
68.00	A	3.9700	3.0800	2.3800	1.8500	1.4400	1.1100	0.8600
	B	2.6800	2.0800	1.6100	1.2500	0.9700	0.7500	0.5800
	C	1.8000	1.3900	1.0800	0.8400	0.6500	0.5000	0.3900
	D	1.2100	0.9300	0.7200	0.5600	0.4400	0.3400	0.2600
	E	0.8100	0.6200	0.4800	0.3800	0.3000	0.2300	0.1700
Acres		1	2	3	4	5	6	7
70.00	A	3.9400	3.0500	2.3700	1.8400	1.4200	1.1000	0.8600
	B	2.6600	2.0600	1.6000	1.2400	0.9600	0.7400	0.5800
	C	1.7800	1.3800	1.0700	0.8300	0.6400	0.5000	0.3900
	D	1.1900	0.9300	0.7200	0.5600	0.4300	0.3400	0.2600
	E	0.8000	0.6200	0.4800	0.3800	0.2900	0.2300	0.1700