CONNECTING GLOBALLY
North Central Texas General Aviation and Heliport System Plan

Airport Community Value Model Manual

A Manual for Updating Database(s) Required for the Airport Community Value Model

January 2012

Airport Community Value Model Manual

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EXHIBITS

A. GLOSSARY

This section defines acronyms and abbreviations used throughout the document.

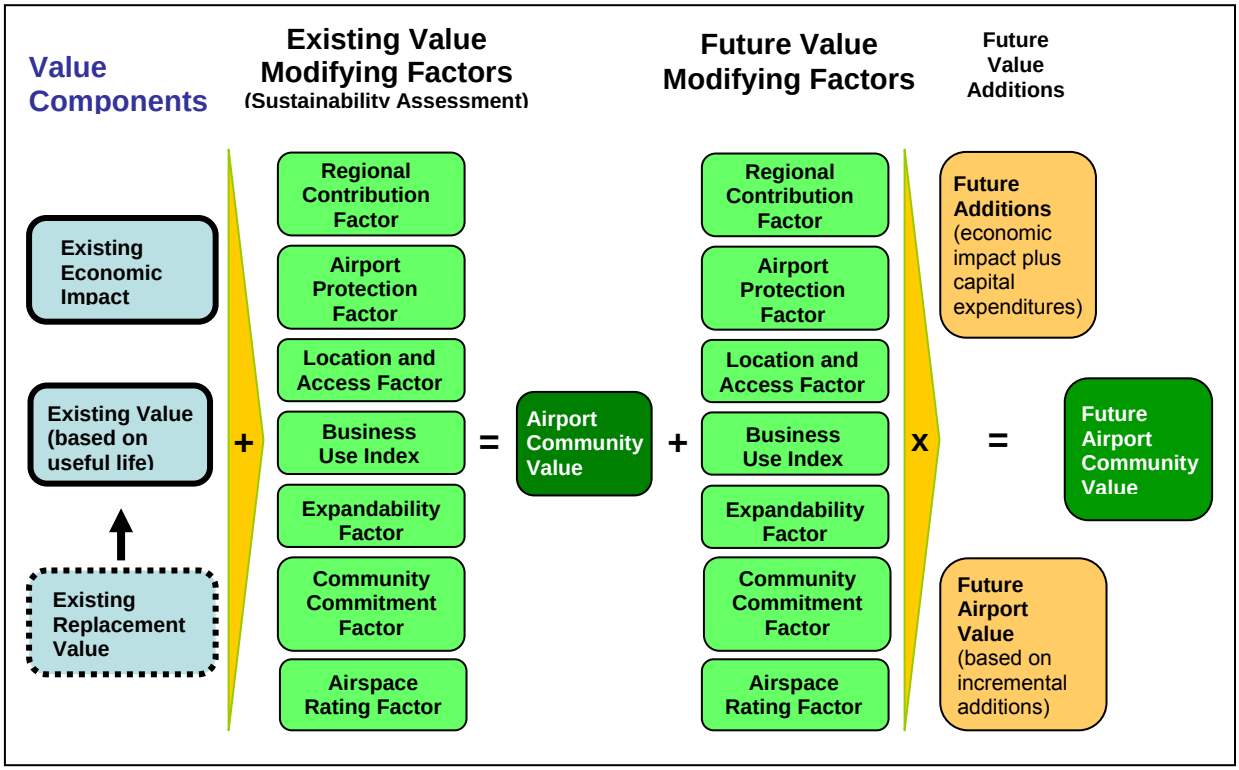
Term	Description
ACV	Airport Community Value
ARC	Airport Reference Code
ARV	Airport Replacement Value
ATCT	Air Traffic Control Tower
BUI	Business Use Index
CCF	Community Commitment Factor
DAL	Dallas Love Field
DFW	Dallas/Fort Worth International
EAV	Existing Airport Value
GIS	Geographic Information System
NCTCOG	North Central Texas Council of Governments
RARF	Regional Airport Resource Factor
RPZ	Runway Protection Zone
RSA	Runway Safety Areas
System Plan	North Central Texas General Aviation and Heliport System Plan
TSZ	Traffic Survey Zone
TxDOT	Texas Department of Transportation
ULR	Useful Life Reductions
VFCV	Vertical Flight Community Value
VMF	Value Modifying Factors

B. INTRODUCTION

As part of the North Central Texas General Aviation and Heliport System Plan (System Plan), a new metric, Airport Community Value (ACV), has been created. In order for the North Central Texas Council of Governments (NCTCOG) to respond to changes in its airport system, it is important for the ACV model to be updated on a regular basis. This manual provides guidance on the data required and process that should be followed to update the model.

Exhibit 1 illustrates the ACV Estimation Process. The exhibit also shows the relationship of the data inputs necessary to calibrate the model.

Exhibit 1: ACV Estimation Process



Source: CHA Aviation Development Team

The process begins by listing components of an airport's existing value, which are then adjusted based on modifying factors to estimate its existing ACV. The model also includes a means to estimate future ACV; however, the System Plan did not include the use of this functionality in the model.

The following section describes the data required to calibrate the ACV model, and suggests sources and/or techniques and assumptions for performing an update of the ACV metric.

C. DATA REQUIRED

The data required for the ACV model is described in this section. Prior to updating the ACV model, all data should be collected, assembled into the ACV Database (Microsoft Excel file), and checked for accuracy and integrity.

Exhibit 2: ACV Data Required and Recommended Sources

Data	Data Value	Data Description, Scoring Method, & Source(s)
Airport Classification	If A,B,C, then 1 If D, then 2 If E, then 3 If F or G, then 4	Data regarding each airport's design class is designated in the System Plan, as follows: o A = Private Use / non-paved runway / ≤ 2,000' runway / < 10 based aircraft o B = Airpark mixed Residential / Commercial / Industrial Activity o C = ARC A-1 ≤ 3500 paved runway, <10 Based AC and no based turbojet o D = ARC B-II ≤ 5000 paved runway, 10-49 Based AC or no based turbojet / low amenities (Define amenities or remove altogether) o E = ARC B-II ≤ 5500 paved runway, 50-99 Based AC or 1-4 based turbojet / medium amenities o F = ARC C-II ≤ 6000 paved runway, 100+ Based AC or 5+ based turbojet / high amenities o G = ARC > C-II / Faster than "C" (141 knots), Aircraft Design more than "II", (118 ft wingspan)
Economic Impact Figures	Discrete Values	The ACV model can utilize three values for this factor: airport jobs; total output; and, tax contribution. For the update of ACV model, data should be available from the most recent statewide Economic Impact Study. For airport jobs, the ACV model can utilize total jobs figures from public and private employers, both direct and indirect (induced) that can be linked to the local airport. For total output, if no update to such study exists, adjust existing values in the ACV model by the Consumer Price Index. Additionally, some larger airports in the system have their own economic impact studies, from which this data can be drawn.
Service Area Population	Discrete Value	Individual airport service area population is available from NCTCOG. The geography of each airport's service area was used to query population data from underlying data provided by NCTCOG, which is categorized by Traffic Survey Zone (TSZ) for use with the NCTCOG's calibrated travel demand model.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Control of Runway Protection Zone (RPZ)	If yes, then 1 If no, then 0	This value represents the extent to which an airport controls land beneath the RPZ and a score is assigned based on a review of airport property lines and current aerial photography, or other sources available for individual airports. For example, an airport with control of the RPZ at each runway end (and all four RPZs at facilities with crosswind runways) receives two points. A facility with one of two RPZs under control receives one point. A facility with no RPZs under control receives zero points. Scoring for facilities with multiple runways awards a fraction of points depending on the number of runway ends, with the maximum point total for any airport being two points. Scoring is as follows: o If yes, then 1 o If no, then 0
Runway Safety Areas (RSA) in Place	If yes, then 1 If no, then 0	The scoring for this factor is performed in the same manner as the RPZ factor scoring described above. In this way, points are awarded (0 or 1); the maximum point total for any airport is 1.
Land Use Compatibility	1 point for each compatible quadrant for a total of no more than 4 points per airport.	The compatibility of land uses around each airport is assessed by first categorizing the surrounding areas into quadrants. Then, types of uses occurring on land in each quadrant are observed via the most current aerial photography available. Scoring for this factor is as follows: o 1 point for each quadrant where abutting land uses were compatible (in descending order). o Natural/undeveloped areas o Agricultural lands o Low-rise/low density industrial areas o Residential, retail, and office/commercial uses are considered non-compatible. Residences that are part of agricultural lands where the primary purpose is for agricultural use are considered part of the agricultural use.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Height Hazard Zoning	If yes, then 1 If no, then 0	The existence of protective zoning and/or land use controls around system airports is assessed via online research or contact with local governments. Scoring for this factor is as follows: o Airports where such controls are identified = 1 point o Airports where no controls exist = 0 points Note: In some cases, communities are in the process of adopting zoning or other height controls for land around local airports. In these instances, one point is awarded in anticipation of the adoption of these controls.
Surface Roadway or Highway Access	Value either .25, .50, .75, or 1	A three-mile radius is used as the threshold for assessing proximity to surface access facilities for each airport. This data was provided by NCTCOG geographic information system (GIS) database. For this factor, the following gradient scoring is used: o A facility on an accessible limited-access interstate highways = 1 points o A facility on a limited-access state highway = .75 points o A facility on a major/regional arterial = .50 points o A facility located on a local road = .25 point
Proximity to an Economic Center	Value either 1, 2, 3, or 4	This data was retrieved utilizing GIS software to review NCTCOG's Major Employer database and geographic location and population density. Utilizing the same gradient scoring system as described for surface access, the following scoring is used: o Airports over 9 miles from a center = 1 points o Airports 7 to 9 miles from a center = 2 points o Airports 4 to 6 miles from a center = 3 points o An airport < three miles from a center = 4 point

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Number of Based Jets	Discrete Value	This data was retrieved from the most current Airport Master Record, 5010 Forms available. This discrete value is used as a direct input into the model. The formula first assigns 2 points to the facility with the highest number of based jets. From this point, the model assigns fractional percentages of this highest score for the other system airports, based upon their comparative percentage of the highest number of based jets of all airports in the system. Therefore the number of all based jets by airport in the system must be collected first, so the highest based jet number (discrete value) can be inserted into the formula in each airport's data input sheet, thus deriving the correct score for each system airport in this category.
Itinerant Operations	Discrete Value	This data was retrieved from the most current Airport Master Record, 5010 Forms available. The discrete value is used as a direct input into the model. In the same manner described above for Based Jets, the formula first assigns 2 points to the facility with the highest itinerant operations. From this point, the model assigns fractional percentages of the highest scores for the other system airports, based upon their comparative percentage of the highest business activity of all airports being studied. Therefore, the number of itinerant operations for each airport in the system must be collected first, so the highest based jet number (discrete value) can be inserted into the formula in each airport's data input sheet, thus deriving the correct score for each system airport in this category.
Airside Expandability (on-airport)	If 100%, then 1 If 75%, then 2 If 50%, then 3 If 25% or less, then 4	The expandability of an airport's airside is assessed by first categorizing the airside areas into quadrants. Then, expandability in each quadrant is assessed via the most current aerial photography. The scoring for this factor is as follows: o 100% expandable = 1 point o 75% expandable = 2 points o 50% expandable = 3 points o 25% or less expandable = 4 points Thus, if an airport can expand in all directions, it is awarded 100 percent expandability, which is valued at 1 point. Conversely, facilities that cannot expand in any airside area are awarded 4 points (inverse scoring). In this way, airports with expansion potential can improve their ACV by doing so.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Landside Expandability (on-airport)	Value either 0, 1, 2, 3, or 4	The expandability of an airport's landside is assessed by first determining the amount of landside area available for development in acres. Then, based on the range of acres available in the system, a point value is assigned for airports that fall within particular ranges. The scoring for this factor is as follows: o 1 to 20 acres = 4 point o 21 to 100 acres = 3 points o 101 to 400 acres = 2 points o 401+ acres = 1 points The division between scoring ranges is based upon the large amounts of land at several airports. Thus, if an airport can significantly expand its landside area (100+ acres), it is awarded the highest values. Conversely, facilities that have only 20 acres, when compared to the system, do not score as highly.
Off-Airport Expandability	Value either 1, 2, 3, or 4	This factor is scored similar to the on-airport airside expandability factors. Off-airport property adjacent to the airport is analyzed for its expansion capability. The scoring for this factor is as follows: o 1 quadrant = 1 point o 2 quadrants = 2 points o 3 quadrants = 3 points o 4 quadrants = 4 points
Current Plans	Value either 1, 2, 3, or 4	An airport is awarded 1 point for each plan in place for no more than a total of 4 points. Plans include: airport master plans, capital improvement plans, airport zoning, Part 150 studies, and/or airport business plans. This data is retrieved through internet research and contact with airport sponsors within the region.
Funding History	Value either 0, 1, or 2	Airports are awarded 2 points for having received TxDOT funding for each of the last three consecutive years. One point is awarded for airports with some level of funding for one or two years, but also showing a break in funding. Zero points are awarded to airports with no funding over a three-year period. This data is available from TxDOT's Aviation Capital Improvement Program.

Class B Airspace	Value either 1, 2, 3, or 4	The impact of Class B airspace around Dallas/Fort Worth International (DFW) and Dallas Love Field (DAL) is less significant for facilities that are farther away than for those that are close to these airports. To account for this, points are assigned to airports based on their distance from Class B Airspace, as follows: o 0 to 10 miles = 1 points o 10 to 15 miles = 2 points o 15 to 20 miles = 3 points o 20+ miles= 4 point Data is provided by DFW Terminal Area Chart.

Exhibit 2: ACV Data Required and Recommended Sources (continued)

Data	Data Value	Data Description, Scoring Method, & Source(s)
Land Acreage	Discrete Value	This data was retrieved from the most current Airport Master Record, 5010 Forms available, and is used as a direct input into the ACV model.
Land Value	Discrete Value (price per acre)	Because a wide variety of price points for vacant land exists that can accommodate an airport in North Central Texas, a market analysis was performed. First, airports were classified as either existing in urban, suburban, or rural counties, based on data from the Real Estate Center at Texas A&M University. Then, airports in the system were stratified into four categories (primary-small, primary-large, secondary-small, and secondary-large), which reflect market demand for land close to Dallas/Fort Worth (primary) and in suburban areas (secondary), and size demand (small or large) based on the replacement need of each particular airport. Thus, a range of four discrete land values (price per acre) was assigned to each airport. Due to the volatility of real estate prices, this analysis should be updated at the time of the ACV model update.
Runway Pavement Area	Discrete Value	A product of runway length times runway width, which are available from the Airport Master Record (5010 Form), this value is used as a direct input into the ACV model.
Pavement Cost per Unit	Discrete Value	The ACV model also requires the cost of airfield pavement per square foot, which can be cited from the latest bid for new pavement constructed on the airport, or an engineering estimate based on market aggregate prices. Sources for estimating pavement cost per unit should be documented for future reference. This value is used as a direct input into the ACV model.

Runway Age/Condition	Discrete Value	Once total square footage of runway pavement is determined, the age of the runway should be estimated based on recent overlays or improvements. As with hangar and non-hangar building age scoring, square footage should be assigned to be within the following four categories: o 0-5 years o 6-10 years o 11-20 years o 20 or more years. The square footage per age category is used as a direct input into the ACV model.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Taxiway Area	Value either 1, 2, or 3	Paved taxiway areas are not published on the Airport Master Record. Therefore, the ACV model calculates the square footage automatically, as a percentage of the paved runway area. This factor is scored as follows: o A full parallel taxiway = 1 point o A partial parallel taxiway = 2 points o No taxiway = 3 points
Apron Pavement Area	Discrete Value	Paved apron areas are not published on the Airport Master Record. Therefore, a calculation of this area is performed using the most current aerial photography. If no aerial photography is available, the calculation can be performed using Google Earth. This value is used as a direct input into the ACV model.
Conventional Hangars	Discrete Value	Total square footage of conventional hangar storage areas is available from airport sponsors, or through performing a calculation using current aerial photography, or Google Earth. This value is used as a direct input into the ACV model.
Hangar and Building Area(s) Cost per Unit	Discrete Value(s)	The ACV model also requires the cost of hangar and building areas per square foot, which can be cited from the latest bid for new construction on the airport. Also, the cost per square foot can be taken from an airport's current rental rates schedule for such space, or an assessment of market rental rates. Cost per square foot is required for the following: o Conventional Hangars o T-Hangars o Non-Hangar Buildings Sources for estimating building area cost per unit should be documented for future reference. These values are used as a direct input into the ACV model.
Age of Conventional Hangars	Discrete Values	Once total square footage of conventional hangar space is determined, the age of facilities should be estimated (if not available) to be within the following four categories: o 0-5 years o 6-10 years o 11-20 years o 20 or more years. The square footage of space per age category is used as a direct input into the ACV model.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
T-Hangar Units	Discrete Value	The number of T-hangar units is available from airport sponsors. If not available, a calculation can be performed using current aerial photography or Google Earth. The formula to determine units is: total square footage divided by 1,600 (1,600 square feet is the mean industry standard of a single T-Hangar design). This value (# of units) is used as a direct input into the ACV model.
Age of T-Hangar Units	Discrete Values	Once the total of T-hangar units is determined, the age of facilities should be estimated (if not available) to be within the following four categories: o 0-5 years o 6-10 years o 11-20 years o 20 or more years. The number of T-hangar units per age category is used as a direct input into the ACV model.
Fuel System(s)	Value either 0, 1, or 2	Based on the variety of fuel systems in place at airports, the ACV model calculates three different fuel system values based on the types of fuel available. These are defined as: no fuel system; AvGas only; and, AvGas and Jet A fuels. The scoring is: o No fuel system = 0 points o Only AvGas is available = 1 point o Both AvGas and Jet A fuels is available = 2 points.
Instrument Approaches	Value either 0, 1, or 2	Similar to the method for calculating fuel system(s) value, the ACV model calculates three different values for instrument approach equipment, based on the level of approach available. These are defined as: no approach; non-precision only; and, precision capability. The scoring is: o no approach = 0 points o only non-precision is available = 1 point o A precision approach is available = 2 points
Air Traffic Control Tower (ATCT)	Value either 0 or 1	Input the following values: 0 if there isn't an ATCT; and 1 if there is an ATCT. In this way, airports with an ATCT receive full value of that facility in the ACV model.
Non-Hangar Buildings	Discrete Value	Total square footage of non-hangar buildings should be available from airport sponsors, or through performing a calculation using current aerial photography or Google Earth. This value is used as a direct input into the ACV model.

Exhibit 2: ACV Data Required and Recommended Sources (continued)		
Data	**Data Value**	**Data Description, Scoring Method, & Source(s)**
Age of Non-Hangar Buildings	Discrete Values	Once total square footage of non-hangar space is determined, the age of facilities should be estimated (if not available) to be within the following 4 categories: o 0-5 years o 6-10 years o 11-20 years o 20 or more years. The square footage of space per age category is used as a direct input into the ACV model.
Contingencies	Discrete Value	In some cases, a particularly large airport (i.e., DFW) may have additional factors that affect the asset value of the facility. Thus, the ACV model includes such value under this category. Any contingency values should be soundly documented and cited for future reference.

Source: CHA Aviation Development Team

D. UPDATING THE MODEL

Once the data described is assembled into a database, the ACV model can be populated with the discrete data values. This section describes the steps necessary to update the ACV model.

UPDATING AIRPORT REPLACEMENT VALUE COMPONENTS

The model estimates an airport's replacement value with discreet data inputs for each of the following components. Exhibit 3: Data Input Sheet is a screenshot of the ACV model where the following components are updated.

- **Land Value:** Land value is a product of total acres on airport property and the cost per acre. Total acres are available from the Airport Master Record, 5010 Form. Drawing on current real estate market data for land values in areas either zoned or used for light industrial and/or warehousing activities, cost per acre should be estimated. Due to inherent fluctuations in the real estate market, sources should be documented along with any assumptions.

  ⇒ *Enter:* acres
  ⇒ *Enter:* cost per acre

- **Pavement Area:** Pavement area is the product of all paved square footage on the airfield and the cost per square foot of pavement.

  - Runway: A product of runway length times runway width, with these dimensions being available from the Airport Master Record (5010 Form), and pavement cost per square foot.

    ⇒ *Enter:* square feet
    ⇒ *Enter:* pavement cost per square foot

  - Taxiway[1]: Paved taxiway areas are not published on the Airport Master Record. Therefore, the ACV model calculates this area automatically. Input the following values: 1 if there is a full parallel taxiway; 2 if there is a partial parallel taxiway; and 3 if there is no taxiway.
    The model calculation accounts for taxiway connectors.

    ⇒ *Enter:* 1, 2, or 3

- Apron: Paved apron areas are not published on the Airport Master Record. Therefore, a calculation of this area is performed using aerial photography. If no aerial photography is available, the calculation can be performed using Google Earth, which can be downloaded at no cost at http://earth.google.com/.

  ⇒ *Enter:* square feet
  ⇒ *Enter:* pavement cost per square foot

- **Parking Lots/Parking Structures[2]:** Some larger airports have significant auto parking areas, either surface lots or parking structures, that are included as part of the total asset value. Just as described for Taxiway area value, the ACV model can be customized to include the value of parking areas. For example, the replacement values for auto parking at DFW and DAL were requested and provided by airport management. The ACV model can accommodate either a formula for determining the value of auto parking facilities or direct entry of a recent engineering cost estimate.

  ⇒ *Enter:* # of spaces (insert as placeholder or for use with user formula)
  ⇒ *Enter:* recent cost of construction, or engineering estimate of the cost to replace existing parking facilities

- **Hangar Area:** Hangar area is the product of all square footage of aircraft storage and the cost of hangar storage per square foot on the airport.

  - Conventional: The product of all conventional hangar square footage and average cost of construction per square foot.

    ⇒ *Enter:* square feet
    ⇒ *Enter:* conventional hangar cost per square foot

  - T-Hangar: The sum of all T-hangar storage units and average cost of construction per unit.

    ⇒ *Enter:* units
    ⇒ *Enter:* T-hangar cost per square foot

- **Fuel System[1]:** The ACV model calculates three different fuel system values based on the level of fuel available. Input the following values: 0 if there is no fuel system; 1 if only AvGas is available; and, 2 if both AvGas and Jet A fuels are available.

  ⇒ *Enter:* 0, 1, or 2

- **Instrument Approaches:** The ACV model calculates three different values for instrument approach equipment, based on the level of approach available.

  Input the following values: 0 if there is no approach; 1 if only non-precision is available; and, 2 if a precision approach is available.

  ⇒ *Enter:* 0, 1, or 2

- **ATCT:** The ACV model assumes one value for an ATCT. Input the following values: 0 if there isn't an ATCT; and 1 if there is an ATCT.

  ⇒ *Enter:* 0 or 1

- **Non-Hangar Buildings:** Non-hangar building value is the product of all square footage of such buildings and the average cost of construction per square foot.

  ⇒ *Enter:* square feet
  ⇒ *Enter:* non-hangar building cost per square foot

UPDATING AIRPORT EXISTING/DEPRECIATED VALUE COMPONENTS

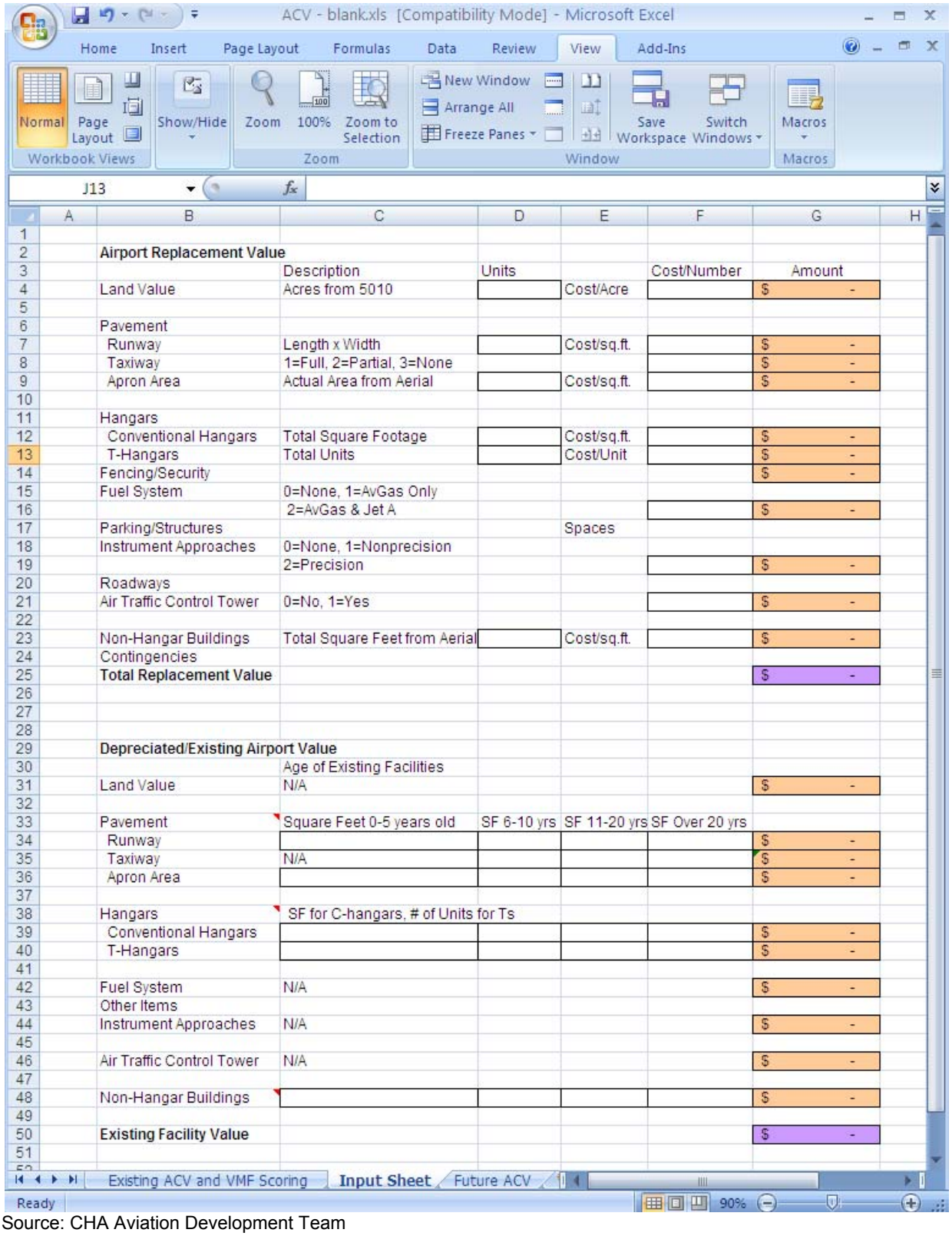
The model estimates an airport's existing or depreciated value with estimates of the age of facilities. In this regard, some estimate of the square footage within the following four categories should be entered. Enter square footage by age category for the following value components: 0-5 years; 6-10 years; 11-20 years; and over 20 years in age.

- **Pavement Area**
- **Hangar Area**
- **Non-Hangar Buildings**

Due to the nature of a number of assets and/or facilities, the model does not depreciate the value of the following four components: land, instrument approach equipment, fuel systems, and ATCT.

Once completed, the data input steps described in these sections estimate an airport's replacement and existing/depreciated values.

Exhibit 3: Data Input Sheet



	A	B	C	D	E	F	G	H
1								
2		**Airport Replacement Value**						
3			Description	Units		Cost/Number	Amount	
4		Land Value	Acres from 5010		Cost/Acre		$ -	
5								
6		Pavement						
7		Runway	Length x Width		Cost/sq.ft.		$ -	
8		Taxiway	1=Full, 2=Partial, 3=None				$ -	
9		Apron Area	Actual Area from Aerial		Cost/sq.ft.		$ -	
10								
11		Hangars						
12		Conventional Hangars	Total Square Footage		Cost/sq.ft.		$ -	
13		T-Hangars	Total Units		Cost/Unit		$ -	
14		Fencing/Security					$ -	
15		Fuel System	0=None, 1=AvGas Only					
16			2=AvGas & Jet A				$ -	
17		Parking/Structures			Spaces			
18		Instrument Approaches	0=None, 1=Nonprecision					
19			2=Precision				$ -	
20		Roadways						
21		Air Traffic Control Tower	0=No, 1=Yes				$ -	
22								
23		Non-Hangar Buildings	Total Square Feet from Aerial		Cost/sq.ft.		$ -	
24		Contingencies						
25		**Total Replacement Value**					$ -	
26								
27								
28								
29		**Depreciated/Existing Airport Value**						
30			Age of Existing Facilities					
31		Land Value	N/A				$ -	
32								
33		Pavement	Square Feet 0-5 years old	SF 6-10 yrs	SF 11-20 yrs	SF Over 20 yrs		
34		Runway					$ -	
35		Taxiway	N/A				$ -	
36		Apron Area					$ -	
37								
38		Hangars	SF for C-hangars, # of Units for Ts					
39		Conventional Hangars					$ -	
40		T-Hangars					$ -	
41								
42		Fuel System	N/A				$ -	
43		Other Items						
44		Instrument Approaches	N/A				$ -	
45								
46		Air Traffic Control Tower	N/A				$ -	
47								
48		Non-Hangar Buildings					$ -	
49								
50		**Existing Facility Value**					$ -	
51								

Source: CHA Aviation Development Team

UPDATING THE AIRPORT COMMUNITY VALUE SCORING MATRIX

The estimated replacement and existing/depreciated values determined up to this point are used in the ACV model to arrive at the existing Airport Community Value. In addition to these values, the ACV is formulated by incorporating the following:

- **Existing IMPLAN (IM**pact analysis for **PLAN**ning) **Values:** For the initial model runs, data for this value was available from the Texas Department of Transportation (TxDOT) 2005 Economic Impact Study. As described, utilize updated economic impact figures for this factor. If no updated data exists for total output, apply the Consumer Price Index to existing values in the ACV model. For individual airport planning efforts, it is recommended that full economic impact assessments be performed. Components of the existing IMPLAN outputs used are:

    - Airport Jobs: The ACV model can utilize data on total jobs from public and private employers, both direct and indirect (induced) that can be linked to the local airport.

      ⇒ *Enter:* number of direct and induced jobs separately

    - Total Output: The 2005 Study provided total output in U.S. dollars. If no update has been performed, some estimate of total direct impact should be determined.

      ⇒ *Enter:* U.S. dollar amount of direct and induced outputs separately

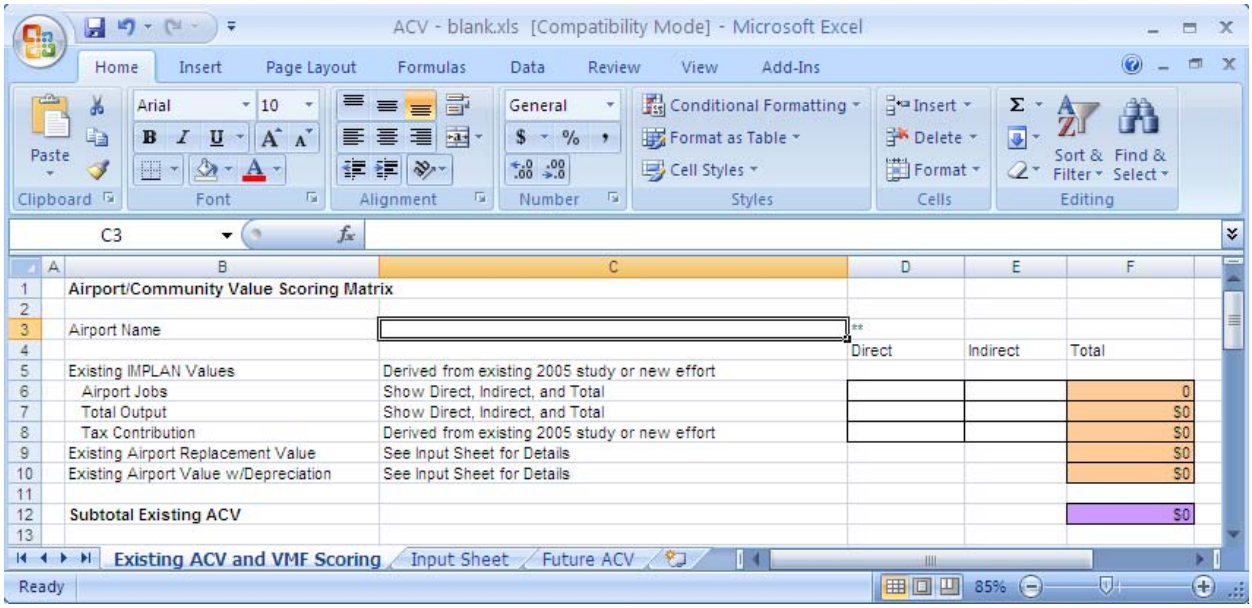
    - Tax Contribution: The ACV model can utilize IMPLAN data on the tax contributions of a local airport. Typically, the IMPLAN model estimates tax expenditures associated with overall spending at the airport.

      ⇒ *Enter:* U.S. dollar amount of total tax contribution

- **Existing Airport Replacement Value:** The ACV model automatically populates this field from the data entered on the Data Input Sheet, which is described in the previous section.

- **Existing Airport Value with Depreciation:** The ACV model automatically populates this field from the data entered on the Data Input Sheet, which is described in the previous section.

Exhibit 4: Existing ACV



Source: CHA Aviation Development Team

Exhibit 4 illustrates how IMPLAN values are shown. Once economic impact data has been entered as described, an existing ACV is calculated.

UPDATING VALUE MODIFYING FACTORS (SUSTAINABILITY ASSESSMENT)

The existing values for economic impact and airport replacement costs offer a baseline estimate of overall economic value. Exhibit 5: Value Modifying Factors Scoring is a screenshot of the ACV model where these factors are updated. The following six primary factors that modify these values are discussed in this section:

- **Regional Airport Resource Factor (RARF):** This factor is determined using two inputs, as follows:

    - Airport Design Classification: The classification of airport type is obtained from the airport classification process of the System Plan. Any changes to the classification of an airport should be reflected in an update of this ACV model.

      ⇒ *Enter:* 1, 2, 3, or 4, depending on unique airport classification

    - Service Area Population: The service area population of each airport was provided by NCTCOG, based on agency data utilized for travel demand model calibration and traffic volume forecasting.

      ⇒ *Enter:* population

- **Airport Protection Factor:** This factor is determined using the following input:

  - Control of the RPZ: This assessment considers the extent to which an airport controls land beneath the RPZ and a score is assigned based on a review of airport property lines, current aerial photography, and other sources available for individual airports.

    ⇒ *Enter:* 0, 1, 2, or a fraction of no more than 2 for the airport.

  - RSAs in Place: The scoring for this factor is performed in the same manner as the RPZ factor scoring described above. In this way, points are awarded (0, 1, or 2) for facilities with a single runway, and a fraction of these points are awarded, based on the assessment for facilities with multiple runways.

    ⇒ *Enter:* 0, 1, 2, or a fraction of no more than 2 for the airport

  - Land Use and Zoning Controls around Airport: This factor relies on information available from municipalities and/or county government.

    ⇒ *Enter:* 1 point for each compatible quadrant for a total of no more than 4 points

  - Height Hazard Zoning for Airport: Scores for this factor are drawn from information available from municipalities and/or county government.

    ⇒ *Enter:* 0 or 1

- **Location/Access:** This factor is determined using two inputs, as follows:

  - **Surface Access:** For this criterion a gradient score is used. In this manner, facilities with ground access via higher capacity roadways are awarded a higher score.

    ⇒ *Enter:* 1, 2, 3, or 4

  - **Location Relative to Economic Center:** This factor is scored using the same gradient scoring system as described for surface access.

    ⇒ *Enter:* 1, 2, 3, or 4

- **Business Use Index:** This factor is determined using two inputs, as follows:

  - Airport Design Classification: The same classification used under the RARF is utilized.

    ⇒ *Enter:* 1, 2, 3, or 4

  - Based Business Aircraft and Itinerant Operations: The number of business type aircraft (jet) currently based at the airport as well as the number of itinerant operations are used as direct inputs into the model.

    ⇒ *Enter:* number of based Jet aircraft
    ⇒ *Enter:* number of itinerant operations

- **Expandability Factor:** As described, two scoring scales are used for this factor. For airside expandability, an inverse scale is used and for landside expandability a sliding scale is used. Scoring for on-airport (airside and landside), and off-airport are as follows:

  - On-Airport Expandability

    Airside ⇒ *Enter:* 1, 2, 3, or 4

    Landside ⇒ *Enter:* 1, 2, 3, or 4

  - Off-Airport Expandability

    ⇒ *Enter:* 1, 2, 3, or 4

- **Community Commitment Factor (CCF):** This factor is determined using two inputs, as follows:

  - **Current Plans on File:** This factor counts a number of airport plan documents, including master plans, capital improvement plans, airport zoning, Part 150 studies, and/or airport business plans.

    ⇒ *Enter:* 1, 2, 3, or 4

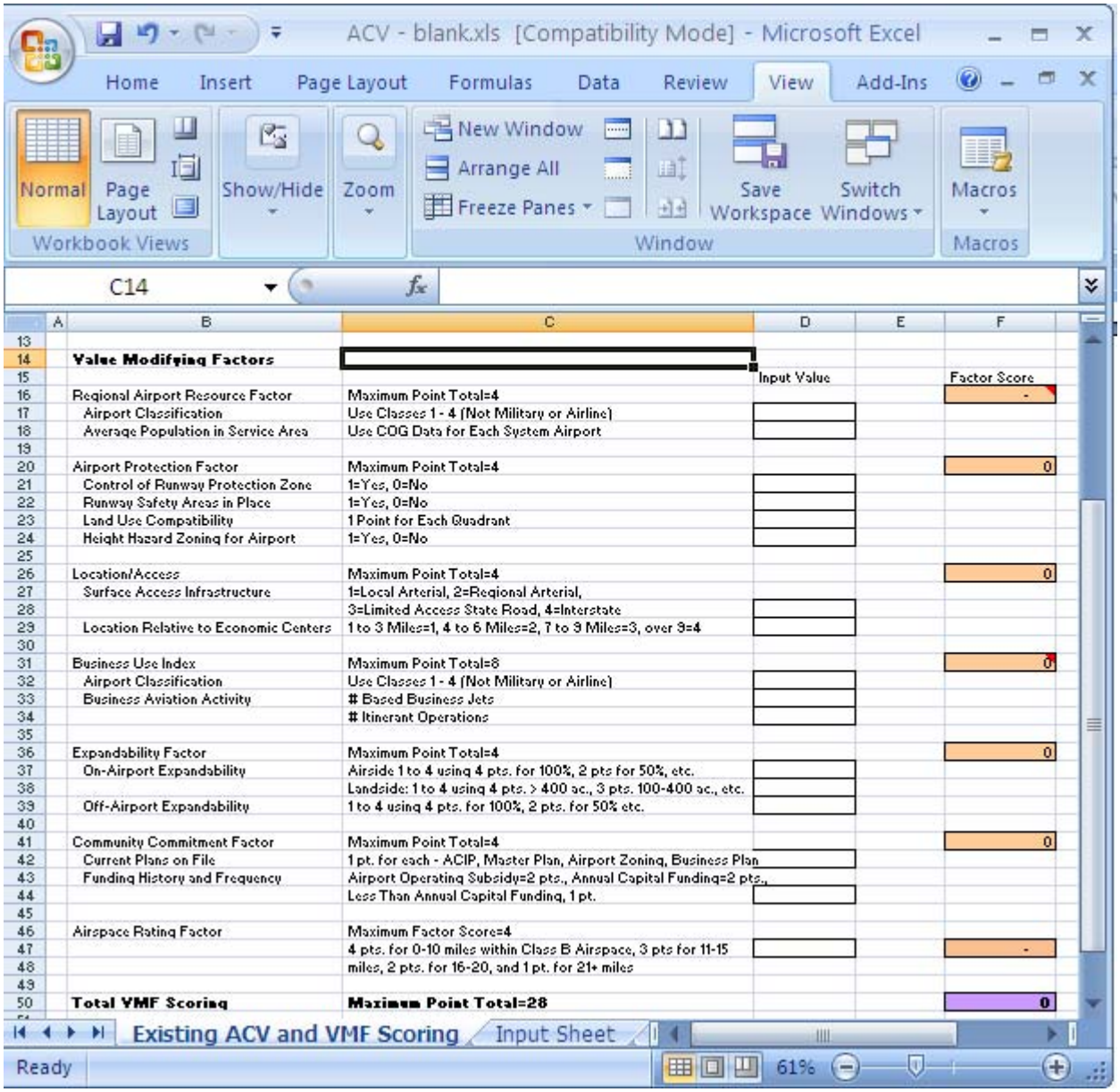
- **Funding History:** Scoring for this factor is based upon three-year State-funding history information available from TxDOT.

  ⇒ *Enter:* 0, 1, or 2

- **Airspace Rating Factor:** This factor uses the gradient scoring system, such that points are assigned to airports based on their distance from Class B Airspace, as follows: 4 points for 0-10 miles; 3 points for 10-15 miles; 2 points for 15-20 miles; and, 1 point for 20-30 miles. Airports outside of this range receive zero points.

  ⇒ *Enter:* 1, 2, 3, or 4

Exhibit 5: VMF Scoring



	B	C	D	F
13				
14	**Value Modifying Factors**			
15			Input Value	Factor Score
16	Regional Airport Resource Factor	Maximum Point Total=4		-
17	Airport Classification	Use Classes 1 - 4 (Not Military or Airline)		
18	Average Population in Service Area	Use COG Data for Each System Airport		
19				
20	Airport Protection Factor	Maximum Point Total=4		0
21	Control of Runway Protection Zone	1=Yes, 0=No		
22	Runway Safety Areas in Place	1=Yes, 0=No		
23	Land Use Compatibility	1 Point for Each Quadrant		
24	Height Hazard Zoning for Airport	1=Yes, 0=No		
25				
26	Location/Access	Maximum Point Total=4		0
27	Surface Access Infrastructure	1=Local Arterial, 2=Regional Arterial,		
28		3=Limited Access State Road, 4=Interstate		
29	Location Relative to Economic Centers	1 to 3 Miles=1, 4 to 6 Miles=2, 7 to 9 Miles=3, over 9=4		
30				
31	Business Use Index	Maximum Point Total=8		0
32	Airport Classification	Use Classes 1 - 4 (Not Military or Airline)		
33	Business Aviation Activity	# Based Business Jets		
34		# Itinerant Operations		
35				
36	Expandability Factor	Maximum Point Total=4		0
37	On-Airport Expandability	Airside 1 to 4 using 4 pts. for 100%, 2 pts for 50%, etc.		
38		Landside: 1 to 4 using 4 pts. > 400 ac., 3 pts. 100-400 ac., etc.		
39	Off-Airport Expandability	1 to 4 using 4 pts. for 100%, 2 pts. for 50% etc.		
40				
41	Community Commitment Factor	Maximum Point Total=4		0
42	Current Plans on File	1 pt. for each - ACIP, Master Plan, Airport Zoning, Business Plan		
43	Funding History and Frequency	Airport Operating Subsidy=2 pts., Annual Capital Funding=2 pts.,		
44		Less Than Annual Capital Funding, 1 pt.		
45				
46	Airspace Rating Factor	Maximum Factor Score=4		
47		4 pts. for 0-10 miles within Class B Airspace, 3 pts for 11-15		-
48		miles, 2 pts. for 16-20, and 1 pt. for 21+ miles		
49				
50	**Total VMF Scoring**	**Maximum Point Total=28**		**0**

Source: CHA Aviation Development Team

[1] The ACV model can be customized to allow for adjustments to the value of paved areas (or most other asset value factors), should the embedded ACV formula arrive at a value that does not accurately reflect circumstances at a particular airport. In this case, for example, if a taxiway pavement improvement project was completed recently, and the cost for performing the work is reliable, this figure can be inserted directly into the ACV model and the embedded formula bi-passed.