Slide 1

Revenue Forecasting in Local Government:

Hitting the Bulls Eye

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UNC SCHOOL OF GOVERNMENT
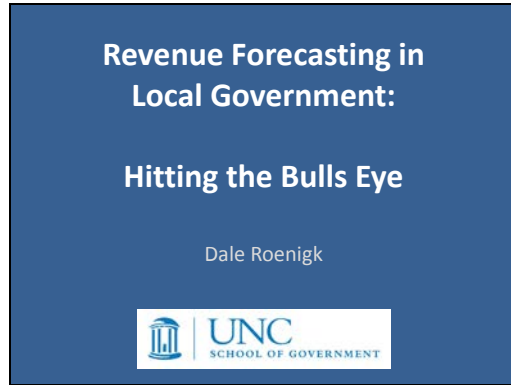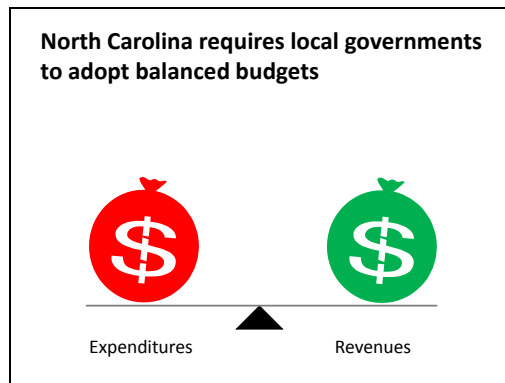
Key objectives for this session.

1. Understand the importance and difficulties of revenue estimation
2. Learn six best practices for forecasting and revenue estimation
3. Learn different forecasting methods and the tradeoffs between them

Slide 2

North Carolina requires local governments to adopt balanced budgets

Expenditures   Revenues

To balance the budget, we need to know both expenditures and revenues. We need to project revenues to understand the level of funding available for services and capital spending. Preparing revenue projections also helps us understand:

- trends,
- the sensitivity of different assumptions, and
- what effect those factors a local government can control – tax rates and fees – can have.

Slide 3

Budget officers have the responsibility to assemble the budget including expenses and revenues

The responsibility for preparing the balanced budget rests with the budget officer.

Slide 4

Our challenge is to forecast revenues in the face of uncertainty and complexity.

Expenditures   Revenues
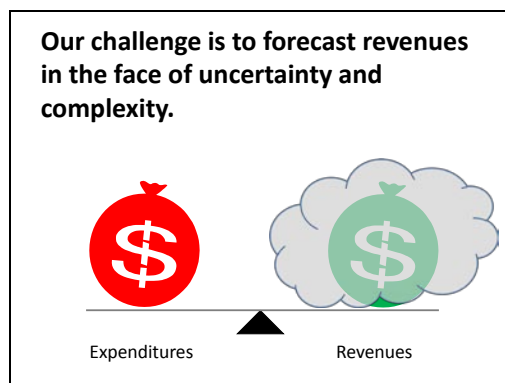
Uncertainty that cannot be controlled. Expenses are relatively within control. Revenues often depend on outside forces over which there is little control. There is also complexity due to many different revenue sources and different estimation techniques. Consequences can be large if you get it wrong.

Slide 5

We want revenue forecasts that are on the mark leading to balanced budgets.

The ultimate objective is for our revenue forecasts to be consistent and as accurate as possible.

Slide 6

We will learn a set of best practices and simple techniques to help us hit the target .

Ready   Aim   Fire

- Ready – Knowing our revenue sources and how they work.
- Aim – Knowing what estimation techniques and methods to use.
- Fire – Learning what to do with estimates over time.

Slide 7

READY

To get ready, we need to understand our revenue sources to know what we are aiming at.

First step in revenue estimation, know your revenues. Most local governments have many sources of revenues. These revenues are generated in different ways and there is a need to know them and how they work if we hope to hit the target. We have a responsibility to be reasonable and accurate.

Slide 8

NC Law requires us to make reasonable estimates.

"Estimated revenue shall include only those revenues reasonably expected to be realized in the budget year, including amounts to be realized from collections of taxes levied in prior fiscal years."

(G.S. 159-13(b)(7)

By statute, local governments must make reasonable estimates of expected revenues. The experience of revenue realizations in past years is a good benchmark for "reasonable". In practice most local government jurisdictions in North Carolina tend to be conservative for a variety of reasons.

Slide 9

There are consequences on both sides of missing revenue estimates.

- **Overestimate**
  - *Insufficient Revenues*
  - Mid-year cutbacks
  - Tapping into fund balance
- **Underestimate**
  - *Excess Revenues*
  - Needless Tax Hikes
  - Cuts or Limits on Services at budget time

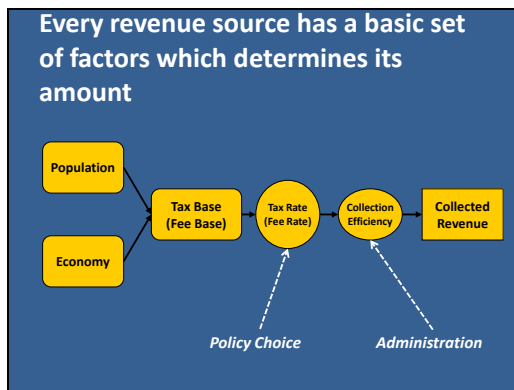There are important consequences for missing the mark in both directions.

- The optimist will overestimate the actual revenues.
- The conservative will underestimate.
- Both positions have implications.

Slide 10

To improve our forecasting, we should have a model for the factors driving revenue.
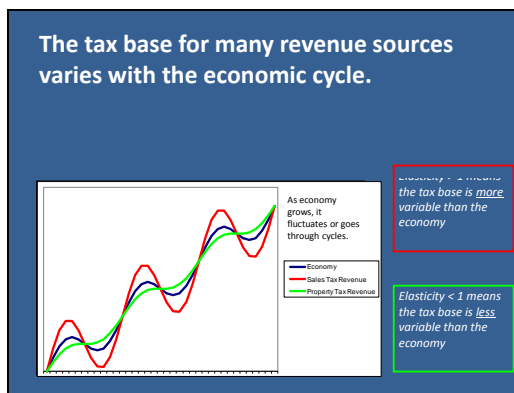
Developing a basic understanding of what drives revenues for local governments is an important part of knowing your revenues. What influences the amounts of revenues that are collected?

Slide 11

Every revenue source has a basic set of factors which determines its amount

Population

Economy

Tax Base (Fee Base) → Tax Rate (Fee Rate) → Collection Efficiency → Collected Revenue

Policy Choice   *Administration*

Not a complete model but population and economy key drivers. Population is not only total numbers but may also include other demographics such as persons per household. Economy is somewhat cyclical. Key variables are the tax base or fee base with tax rates and collection rates being important policy and administrative variables.

Slide 12

The tax base for many revenue sources varies with the economic cycle.

As economy grows, it fluctuates or goes through cycles.

Economy
Sales Tax Revenue
Property Tax Revenue

Elasticity > 1 means the tax base is more variable than the economy

Elasticity < 1 means the tax base is less variable than the economy

Revenues tend to vary with fluctuations in the economy. Some will have greater swings and others will be less sensitive.
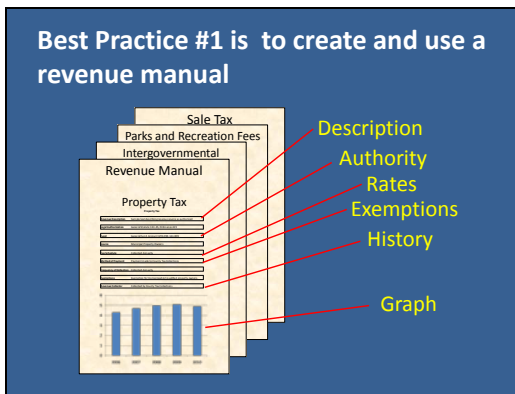
Slide 13

We need to first know where our revenue comes from.

We need to know how revenue is generated.
Many revenue sources in most local governments (40-60). Focus most attention on largest sources.
What laws and rules, state and local, apply?
What amounts of revenue are generated?
What factors drive the revenue source?

Slide 14

Best Practice #1 is to create and use a revenue manual

 A comprehensive document containing critical information about each of the revenue sources in a jurisdiction. Revenue Manual good for elected officials, new managers, new finance/budget officers, everyone.
Possible items that could go into a revenue manual.

- Description of the Revenue Source
- Authority (Statutes, Ordinances)
- Use and Restrictions
- Rates (Current and Changes)
- Possible Exemptions
- Special Events in History
- Drivers of the Revenue
- Forecasting Method and Assumptions
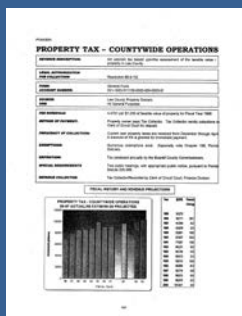- Multiple Years of Data
- Graph

Should be Comprehensive
May need to implement over time, focus first on biggest revenue sources
Start off with a simple spreadsheet matrix

Slide 15
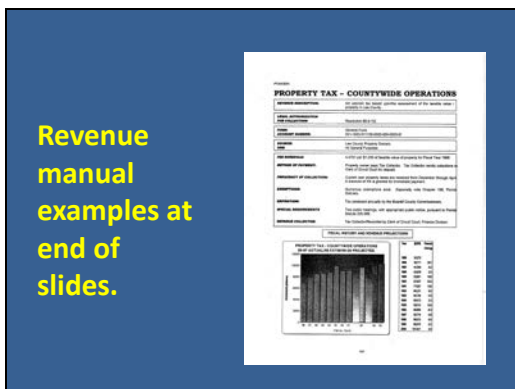
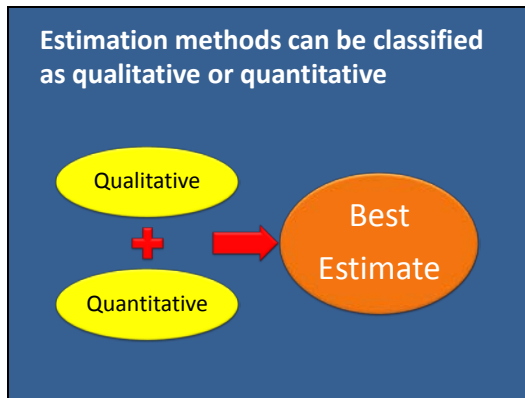**Revenue manual examples at end of slides.**

Slide 16

AIM

We need a set of tools or methods for making revenue estimations.

Second step in revenue estimation is using methods or techniques. We should use appropriate techniques to help us be as accurate as possible. We have in our spreadsheets, tools to help us do this better.
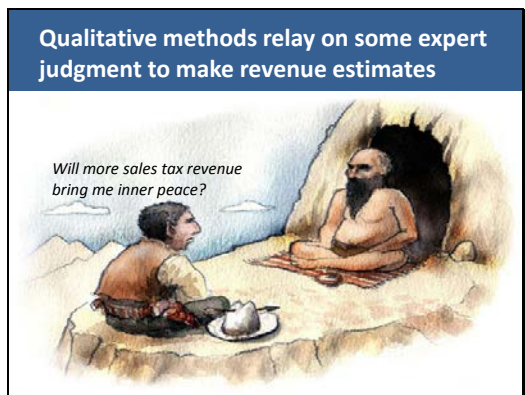
Slide 17

Estimation methods can be classified as qualitative or quantitative

Qualitative

Quantitative

Best Estimate

Goal of estimation methods should be
Accuracy
Manageable effort with time and resources
Transparent, understood by others
Qualitative and Quantitative Methods
Blend of both
Quantitative and Qualitative are not necessarily different domains
Can be combined usefully together
Most employ some of both

Slide 18

Qualitative methods relay on some expert judgment to make revenue estimates

Will more sales tax revenue bring me inner peace?

Surveys show expert judgment is most common method, particularly for smaller jurisdictions.
Examples of Expert Judgment
Local Jurisdiction Service Experts
•*Parks and Recreation Department estimation of users*
•*Utility Director estimate of revenues*
Finance/Budget Officer Expertise
Outside Financial Experts
•*State Economists-Office of Fiscal Research*
•*Other Economists, Finance Experts, Local Business Experts*

Slide 19

Expert Judgment has pluses and minuses.

Pluses

Expert Judgment based on experience can be good. Particularly critical when lacking data or when circumstances change significantly.

Cost is low and this method requires few resources.

Minuses

Danger of relying on expert judgment include biases, selective perceptions, wishful thinking, anchoring, political pressure, inconsistency, inability to replicate by others.

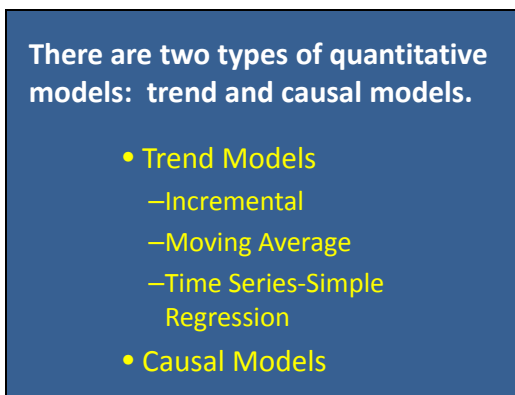Generally easy to present but we may not understand the basis for the judgment.

Research suggests expert judgment may be somewhat less accurate than other estimation methods in most cases.

Slide 20

Quantitative Methods rely on the numbers to produce estimates.
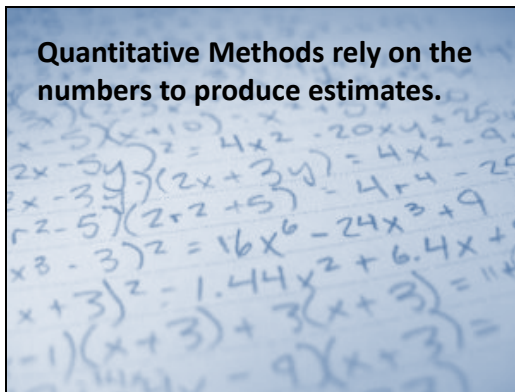
Quantitative methods depend on using numbers to estimate revenues. Ideally should have several years of data to do well. Multiple techniques of varying complexity and resource requirements.

Slide 21

There are two types of quantitative models: trend and causal models.

- Trend Models
  - Incremental
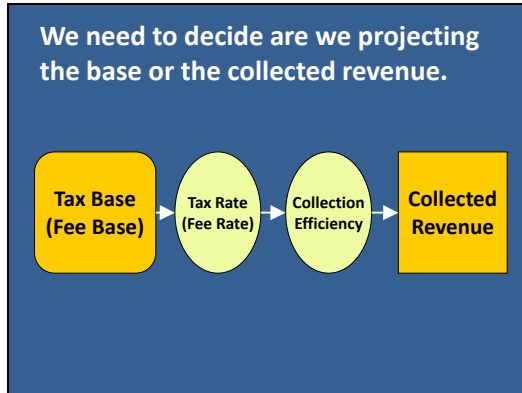 - Moving Average
  - Time Series-Simple Regression
- Causal Models
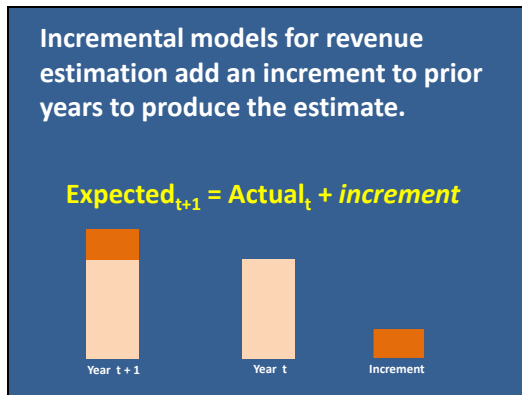
Trend Models are fundamentally historical, extending the trend.

Causal models, may be based on historical patterns, but do not need to be. Require factors to be identified.

Slide 22

We need to decide are we projecting the base or the collected revenue.

Tax Base (Fee Base) → Tax Rate (Fee Rate) → Collection Efficiency → Collected Revenue
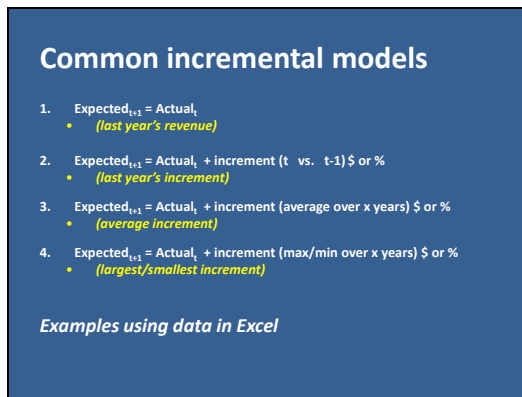
Estimation can be done on either the tax base or the collected revenue amounts. However, recognize that if tax rates and collection efficiency has changed over time, this will affect the accuracy of estimates based directly on actual collected revenues.
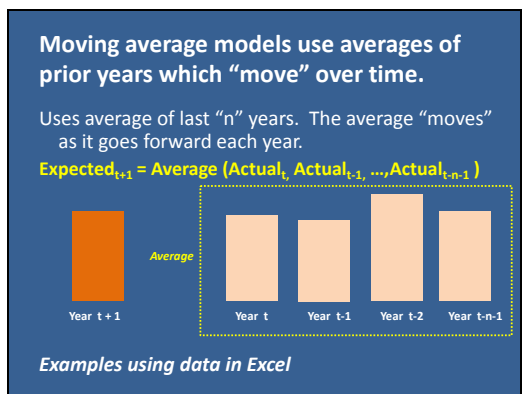
Slide 23

Incremental models for revenue estimation add an increment to prior years to produce the estimate.

$$\text{Expected}_{t+1} = \text{Actual}_t + increment$$

Year t + 1   Year t   Increment

Incremental Models say here was the actual, lets adjust it by some increment. The increment can be $ or %, varying levels of change, using varying amounts of history. Simple, easy to understand, and easy to adjust. Can be "tuned" with expert judgment. Most commonly used quantitative models. Only modest data needed, accuracy uncertain during times of significant change.

Slide 24

Common incremental models

1. $\text{Expected}_{t+1} = \text{Actual}_t$
   - *(last year's revenue)*

2. $\text{Expected}_{t+1} = \text{Actual}_t + increment$ (t vs. t-1) $ or %
   - *(last year's increment)*

3. $\text{Expected}_{t+1} = \text{Actual}_t + increment$ (average over x years) $ or %
   - *(average increment)*

4. $\text{Expected}_{t+1} = \text{Actual}_t + increment$ (max/min over x years) $ or %
   - *(largest/smallest increment)*

Examples using data in Excel

Use Historical Data to Determine Increment
Increment based on Absolute Dollar Change or Percentage Change.
Increment may be zero (no change) or based on averages, minimum or maximum change, or last change
May use expert judgment to select or adjust increment
Incremental models are simple and easily understood.

Slide 25

Moving average models use averages of prior years which "move" over time.

Uses average of last "n" years. The average "moves" as it goes forward each year.
$$\text{Expected}_{t+1} = \text{Average} (\text{Actual}_t, \text{Actual}_{t-1}, ..., \text{Actual}_{t-n-1})$$

Year t + 1   *Average*   Year t   Year t-1   Year t-2   Year t-n-1

Examples using data in Excel

Easy to calculate, only modest data needed.
More complex moving averages are possible but calculation effort increases.
Moving Averages will lag strongly trending data.
For calculations of monthly data, seasonal adjustments may be necessary.

Slide 26

Time series models use regression to project estimates forward

Uses a simple statistical regression to estimate an equation

Expected$_t$ = intercept + (slope * year)

- *The slope is the estimated increment for a single year*
- *Regression estimates are usually linear but can take other forms*

Examples using data in Excel

Now easy to do with tools in Excel.
High variation or lack of trend may produce imprecise estimates.
Regressions may be "black box" to some and harder to sell.

Slide 27

Causal models are complex statistical methods to estimate revenue

Statistical deterministic models using regression with one or more factors other than time deemed to cause or explain expected levels of revenue.

Expected$_t$ = intercept + b$_1$x$_1$ + b$_2$x$_2$ +b$_3$x$_3$

- Factors may be economic, demographic, or social in nature. Complex models don't necessarily work better.
- Models require some expertise to develop and lots of data to estimate accurately. Also require future estimates of the causal factors to estimate the future revenues.
- Good causal models can be accurate if strong relationships are found.
- Surveys indicate limited use, particularly in small jurisdictions or those not under fiscal stress.

Slide 28

To make our aim true, we need to decide what method to use and how best to use these methods to make projections.

Selecting which estimation method to use depends on resources available including expertise, stability in revenue sources, and understanding of revenue sources.

Slide 29

Best Practice #2 is to select the appropriate method to use for estimation.

Comparing Estimation Methods			
Method	Accuracy	Effort	Transparency
Judgmental	Low to Moderate. May be reasonably high if expert is good	Low	Low to Moderate as it depends on "expert"
Trend	Moderate to high when stable	Low to Moderate	Moderate to High
Causal	Best if good model	Moderate to High	Moderate Depends on Complexity

Selecting a method depends heavily on the availability of data, one's resources or skills, and time. Estimation is strongest when using a combination of quantitative methods with qualitative judgments to sharpen. Most tend to blend methods based on conditions.

Slide 30

Best Practice #3 is to test assumptions for forecasts.

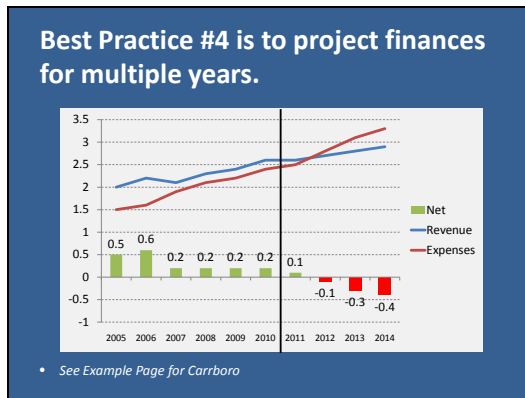Of course it seems like I should cross the road, but I wonder.....

As part of the projection process, alternative assumptions should be tested to understand the range of possibilities and sensitivity of results to key assumptions. Examples might include what should be the
- growth rate in property values
- growth in health care costs

Assumptions causing wider variation may warrant additional analysis and discussion among decision makers. Consider best and worst case scenarios.

Slide 31

Best Practice #4 is to project finances for multiple years.

Net
Revenue
Expenses

0.5 0.6 0.2 0.2 0.2 0.2 0.1 -0.1 -0.3 -0.4
2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

- *See Example Page for Carrboro*

To provide understanding of the future, revenue estimation should be extended for multiple years into the future (3-5). When combined with projection of expenses for the future, examining the balance can indicate future capability to fund services and capital expenditures along with the possible need for tax rate changes to maintain a balanced budget and healthy financial condition.

Slide 32

FIRE

After we have fired off our revenue estimates, our job is not done.
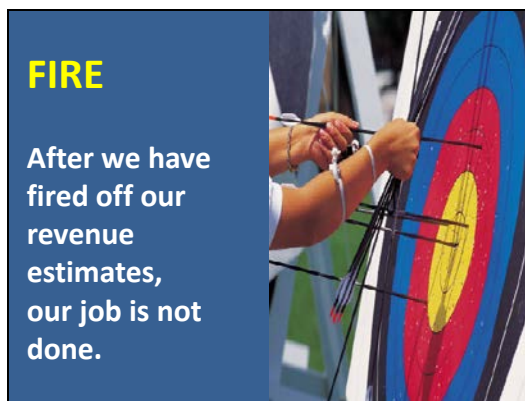
The third step for revenue estimation is what to do after the budget estimates have been made. The forecaster's job is not over but needs to consider monitoring accuracy of the forecasts both for current needs and for improving the accuracy of future projections.

Slide 33

Once we've done our budget forecast, our job is not over.

Budget Forecast

Forecast Update

Future Forecasts
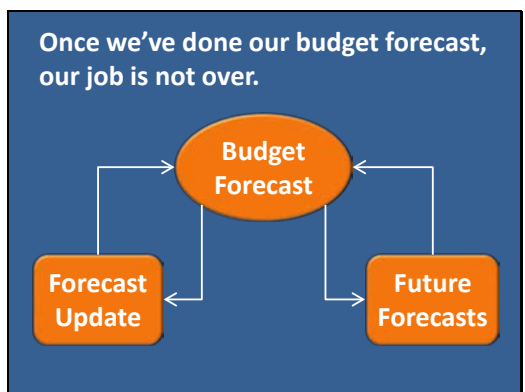
The revenue forecast that goes out with the budget is not the end of the process.
We need learning feedback loops for the short and long term. Short term (within the next year) we need to monitor and update our forecasts throughout the year. If forecasts are coming in low or high, adjustments should be made to update the budget. Longer term, we also need to learn from our annual forecasts to improve our aim for the future.
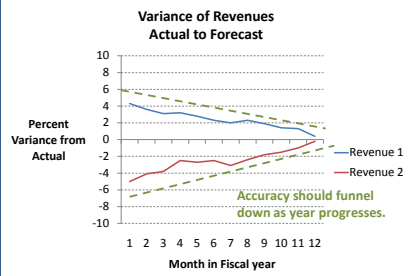
Slide 34

In the next fiscal year we need to monitor forecasts to determine if revenue projections are on the mark.

We need to monitor revenue forecasts as the new budget year unfolds. Forecasts are just estimates, they are not guarantees. If we monitor the actuals compared to the forecast, we can determine early if there appear to be errors which would leave more time for adjustments.

Slide 35

Best Practice #5 is to track actual revenues against estimates.

Variance of Revenues
Actual to Forecast

As the budgeted year unfolds, actual revenues received should be tracked against projections. Adjustments to budget can be made if projections prove inaccurate. Need to adjust for seasonality for monthly revenue numbers such as sales tax or when taxes are paid. As the year progresses, our forecast estimate will "funnel" into the actual if we adjust as we go.
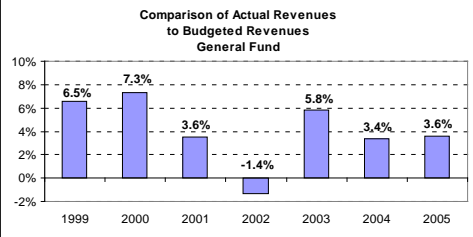
Slide 36

We need to assess the accuracy of our forecasts and learn what works.

If we fail to study the accuracy of our forecasts, the likelihood of improvement is very low. Experience does not produce wisdom. We have to make a conscious effort to learn.

Slide 37

Best Practice #6 is to verify accuracy of estimates against actual results

Comparison of Actual Revenues
to Budgeted Revenues
General Fund

Annual estimates should be compared to actuals to determine accuracy. Over time, knowledge about the precision of estimates for different revenue sources and different methods can be used to increase accuracy. Determine a confidence band for estimates. Inherent conservatism may mean estimates are generally low.

Slide 38

Three steps and six best practices. Good forecasting should be based on a considered approach and attention to good practices which should lead to better forecasts over time.

Slide 39

Uncertainty still reigns. There is a need to understand that no forecast will be perfect and planning for adverse circumstances will be required.

Some additional references

- National Advisory Council on State and Local Budgeting, Recommended Budget Practices, Government Finance Officers Association, 1998. http://www.gfoa.org/services/nacslb/

- Barry Blom and Salomon A. Guajardo, Revenue Analysis and Forecasting, Government Finance Officers Association, 2001.

- Salomon A. Guajardo and Rowan Miranda, An Elected Official's Guide to Revenue Forecasting, Government Finance Officers Association, 2000.

- Thomas A. Garrett and John C. Leatherman, An Introduction to State and Local Public Finance, Part 2-Selected Applications in Public Finance: Revenue Forecasting, 2000. http://www.rri.wvu.edu/WebBook/Garrett/chapterfour.htm

- North Carolina Local Government Budget Association. Has a listserv. http://ncinfo.iog.unc.edu/organizations/budget/index.html

- North Carolina Government Finance Officers Association. Has a listserv. http://ncinfo.iog.unc.edu/organizations/ncgfoa/index.html

PROPERTY TAX – COUNTYWIDE OPERATIONS

REVENUE DESCRIPTION:	Ad valorem tax based upon the assessment of the taxable value of property in Lee County

LEGAL AUTHORIZATION FOR COLLECTION:	Resolution 88-9-102

FUND:	General Fund
ACCOUNT NUMBER:	001-1920-311100-0000-000-0000-00

SOURCE:	Lee County Property Owners
USE:	All General Purposes

FEE SCHEDULE:	4.4751 per $1,000 of taxable value of property for Fiscal Year 1998
METHOD OF PAYMENT:	Property owner pays Tax Collector. Tax Collector remits collections to Clerk of Circuit Court for deposit.
FREQUENCY OF COLLECTION:	Current year property taxes are received from December through April. A discount of 4% is granted for immediate payment.
EXEMPTIONS:	Numerous exemptions exist. Especially note Chapter 196, Florida Statutes.
EXPIRATION:	Tax assessed annually by the Board of County Commissioners.
SPECIAL REQUIREMENTS	Two public hearings, with appropriate public notice, pursuant to Florida Statute 200.065.
REVENUE COLLECTOR:	Tax Collector/Recorded by Clerk of Circuit Court, Finance Division

FISCAL HISTORY AND REVENUE PROJECTIONS

PROPERTY TAX - COUNTYWIDE OPERATIONS
90-97 ACTUAL/98 ESTIM/99-00 PROJECTED
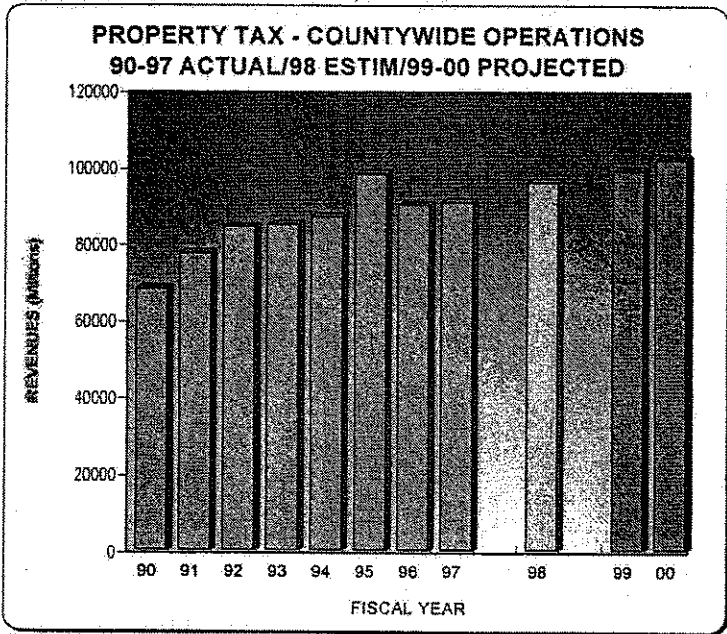
Year	($000)	Percent Change
1985	30,272	
1986	38,771	28.1
1987	41,940	8.2
1988	43,009	2.5
1989	50,961	18.5
1990	67,907	33.3
1991	77,267	13.8
1992	84,231	9.0
1993	84,749	0.6
1994	86,813	2.4
1995	98,012	12.9
1996	89,899	-8.3
1997	90,719	0.9
1998	95,813	5.6
1999	98,875	3.2
2000	101,841	3.0

PROPERTY TAX – COUNTYWIDE OPERATIONS

DISCUSSION

Property tax revenue is a function of annual change in assessments, and the setting of millage by County Commissioners. Between FY85 and FY91, annual taxable valuation increased an average of 12%. The 1991-92 economic recession was a factor that led to dramatic changes beginning FY92. Changes from FY88 to FY98 are listed below:

Fiscal Year	Millage Rate	Adjustment	Change in Taxable Value
1987-88	3.8410		10.6
1988-89	4.1410	0.3000	5.7
1989-90	4.8850	0.7440	15.9
1990-91	4.7850	-0.1000	15.3
1991-92	4.7850	0.0000	9.8
1992-93	4.6850	-0.1000	2.3
1993-94	4.6850	0.0000	2.9
1994-95	5.1501	0.4651	2.8
1995-96	4.5751	-0.5750	3.7
1996-97	4.4751	-0.1000	3.3
1997-98	4.4751	0.0000	4.1
1998-99	4.4751	0.0000	4.7

The .5750 reduction from FY95 to FY96 is the result of a .4050 mill elimination of the Solid Waste levy, and a .1700 mill shift from the General Fund to the Unincorporated MSTU, in response to the municipalities'concerns regarding dual taxation.

The figures for 1985-1997 reflect actual collections. The 1995 revenue increase of 12.9% reflects revenue growth caused primarily by the millage increase from 4.6850 to 5.1501. This increase helped to fund, in part, solid waste operations in lieu of special assessments. That levy was removed in FY96 with a resulting decline in revenue.

In FY96, 0.3700 mills was shifted from Countywide to Unincorporated MSTU to reflect a concern expressed by municipalities that certain county facilities (especially regional parks) costs were being borne by city residents, who were already paying for city parks and recreation.

In FY98, the millage rate was reduced by 0.1000 mills reflecting an additional shift from the Countywide to Unincorporated MSTU.

Projections for FY99 are based upon the July 1, 1998 estimate of taxable value from the Property Appraiser using the existing FY98 millage rate. FY00 projections were made after an examination of the historical pattern of housing starts, taxable value of new construction and change in taxable value. The projection rate was 3.0%.

Change in taxable value has been showing a continuous increase in FY95 having reached 4.1% in FY98The **change in taxable value from FY98 to FY99 is projected to be 4.7%.** Historically, the growth in taxable value has been somewhat more erratic with declines in 1989, 1991 and 1996 over the previous years. Property taxes budgeted at 95% of projected revenues according to Florida law. Collection rates have been approximately 96% of projected revenues with the exception of the past several years in which the rate has fallen to 95%.

DESCRIPTION

A tax levied on land and buildings within the City of Pittsburgh. The tax is calculated by applying a tax millage rate on the assessed value of the property. The assessed value is set by Allegheny County.

Before the beginning of the year, the county provides the City with a certified valuation for all taxable property. This valuation is used to prepare the tax bills that are the original levy. By the end of the year, the levy is adjusted for appeals, exonerations, discounts and additions to arrive at the adjusted net levy. The adjusted net levy is all of the taxes that are due the city.

TAX RATES (in Mills)	1994	1995	1996	1997	1998
Building	32.00	32.00	32.00	32.00	32.00
Land	184.50	184.50	184.50	184.50	184.50
Composite	58.57	58.58	58.41	58.43	58.36

ASSESSMENTS	1994	1995	1996	1997	1998
Building	$1,706,412	$1,690,752	$1,684,673	$1,697,431	$1,724,664
Land	360,755	356,831	352,936	355,862	360,349
Total ($000s)	2,067,167	2,047,583	2,037,609	2,053,293	2,085,013

LEVY (000s)	1994	1995	1996	1997	1998
Building	$54,605	$54,104	$53,910	$54,318	$55,189
Land	66,559	65,835	65,117	65,657	66,484
Original Levy*	121,164	119,939	119,026	119,974	121,674
Adjusted Net Levy	119,694	117,959	115,898	111,066	105,822
Actual Receipts	110,463	110,166	110,276	110,405	109,986
Budget	111,500	112,177	109,720	109,180	110,715
Actual/Original Ratio	0.9117	0.9185	0.9265	0.9202	0.9039

Original levy equals assessed valuation multiplied by millage rate.

FORECAST ASSUMPTIONS

Future tax receipts will depend on both assessment trends and collection rates.

The assessment freeze and the subsequent court decisions have had a dramatic effect on the assessed value of taxable property within the city. The court has ordered the Allegheny County Board of Assessment to increase assessments by two percent for 1999 and 2000. In 1999, certified assessments increased by only 0.72 percent over 1998 certified assessments because of appeals. It is assumed that the certified assessments will increase by a similar amount for 2000. The certified assessments will be available from the County before the beginning of the year. It is assumed that assessments will increase by 2.0 percent for 2001 with the new reassessment and by an additional 1.0 percent in subsequent years.

Historically, the ratio between the original levy and the actual collections has been between 90 and 94 percent. The 2000 year-end estimate and the projections for subsequent years are based on the average ratio for the years 1991 through 1998. The 1999 projections are based on collections through October.

The 1999 estimate is based on actual collections through October.

Formula:

Estimated Revenue = $(A \times B + C \times D) \times E$

Where:

A = Assessed value of improvements
B = Tax rate on improvements
C = Assessment value of land
D = Tax rate on land
E = Actual receipts/original levy ratio

████████████████████	1999	2000	2001	2002	2003
Assessed Values					
Improvements (A)	$1,739,669	$1,755,585	$1,790,696	$1,808,603	$1,826,689
Land (C)	360,384	360,563	367,774	371,452	375,166
Total Assessed Value	$2,100,053	$2,116,147	$2,158,470	$2,180,055	$2,201,856
Percent Change in Value	0.72%	0.77%	2.00%	1.00%	1.00%
Improvement Tax Rate (B)	32.0	32.0	32.0	32.0	32.0
Land Tax Rate (D)	184.5	184.5	184.5	184.5	184.5
Actual/Original Ratio (E)	0.91	0.92	0.92	0.92	0.92
PEL Estimated Revenue ($000)	$111,140	$111,419	$114,668	$115,815	$116,973

BOISE CITY
FY2000 and FY2001 Two-Year Budget

Sales Tax

Sales tax revenue is the City's second most significant revenue source for the General Fund received from the State.

Statute/Authorization: Idaho Code Title 63, Chapter 36, allows the State of Idaho to collect 5 percent sales tax primarily on the sale of goods. A portion of the State's collections is shared with counties, school districts, cities and towns. The State program for distribution is comprised of two parts; each based on different formulas.

amount, which is the difference between the base amount and 6 percent of the total sales tax revenue. The funds are distributed quarterly.

2) *Revenue Sharing.* In 1985, the State Legislature authorized revenue sharing of 7.75% of total sales tax proceeds to the cities and counties. One-half of the shared revenue is distributed to cities. Fifty percent (50%) of the cities portion is allocated based on the percentage of the city's population compared to total population of all cities. Fifty percent (50%) is based on the percentage of the city's preceding year taxable market value compared to the taxable market value of all cities. Payments are made quarterly.

SALES TAX REVENUE	FY97 Actual	FY98 Actual	FY99 Budget	FY99 Projected	FY00 Approved	FY01 Projected	FY02 Projected	FY03 Projected
Total Sales Tax (000)	$624,631	$655,182	$692,365	$715,950	$721,300	$750,152	$780,158	$811,364
Percent Increase	2.6%	4.9%	5.7%	9.3%	0.7%	4.0%	4.0%	4.0%
Business Inventory Repl. (000)								
Base	$818	$818	$818	$818	$818	$818	$818	$818
Excess	$1,484	$1,562	$1,639	$1,639	$1,721	$1,806	$1,895	$1,989
Total Inventory Repl.	$2,302	$2,380	$2,457	$2,457	$2,539	$2,624	$2,713	$2,807
Revenue Sharing								
Population - %'age	20.24%	20.24%	20.24%	20.59%	20.59%	20.89%	21.21%	21.53%

FY 2000/01 Boise City Budget

145

Town of Carrboro Adopted Budget FY06-07

Projected Revenues

	2003-2004	2004-05	2005-2006	2006-2007	2007-2008	2008-2009	2008-2009	2010-2011
	Actual	Actual	Adopted Budget	Recommended Budget			Projected	
ESTIMATED VALUE PER ONE CENT LEVY	109,223	109,223	135,326	145,536	149,704	154,195	158,820	163,585
REQUIRED RATE PER $100 VALUATION	68.52	71.48	63.44	62.44	73.50	74.00	75.00	80.00
GENERAL FUND								
AD VALOREM TAXES	7,791,921	8,227,622	8,569,674	9,385,980	11,095,909	11,505,883	12,645,162	13,188,102
LOCAL SALES TAX	2,705,076	2,874,741	2,929,970	3,159,428	3,254,211	3,351,837	3,452,392	3,555,964
OTHER TAXES/LICENSES	428,338	439,840	435,520	449,195	458,182	467,346	476,693	486,226
UNRESTRICTED INTERGOVERNMENTAL	531,121	549,086	563,314	575,853	593,129	610,923	629,250	648,128
RESTRICTED INTERGOVERNMENTAL	644,165	552,907	693,502	551,185	585,424	600,059	615,061	630,437
FEES AND PERMITS	981,113	917,918	876,485	932,823	951,485	970,515	989,925	1,009,723
SALES AND SERVICES	179,150	236,134	227,000	277,400	291,270	305,834	321,125	337,181
INTEREST EARNINGS	30,310	86,244	37,500	75,000	75,000	75,000	75,000	75,000
OTHER REVENUES	74,800	97,526	40,207	41,707	41,707	41,707	41,707	41,707
LEASE PURCHASE PROCEEDS	543,192	500,280	1,345,700	1,221,138	1,520,000	791,990	480,490	447,620
OTHER TRANSFERS	222,095	297,840	173,827	5,000	0	0	0	0
FUND BAL APPROP - CEMETERY FUND	0	0	40,000	40,000	18,851	0	0	0
FUND BAL APPROP **	0	0	514,136	521,638	592,502	609,987	655,706	622,942
GENERAL FUND TOTAL	14,131,281	14,780,139	16,448,335	17,256,915	19,477,680	19,331,080	20,382,311	21,045,031
FUND BALANCE APPROP AS % OF TOTAL REVENUE	NA	NA	3.13%	3.02%	3.04%	3.16%	3.22%	3.05%
PROJECTED UNDESIGNATED FUND BALANCE 6/30/XX	3,595,765	4,667,033	5,478,701	5,766,038	6,055,226	6,366,839	6,692,989	6,727,394
FUND BALANCE AS % PROJECTED EXPENDITURES	27.7%	31.9%	13.1%	11.4%	11.1%	12.9%	32.8%	33.0%

OUTSTANDING DEBT	2003-2004	2004-05	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
GO BOND	$ 575,393	$ 433,536	$ 331,679	$ 229,821	$ 127,964	$ 126,107	$ -	$ -
CAPITAL LEASE (PROJECTED)	$ 657,373	$ 509,469	$ 1,234,168	$ 1,765,410	$ 2,449,129	$ 2,308,516	$ 1,738,847	$ 1,276,448
MARTIN LUTHER KING, JR. PARK (future debt: $1,553,012)	$ 217,951	$ 201,815	$ 185,029	$ 167,566	$ 149,400	$ 1,683,114	$ 1,590,822	$ 1,436,355
CENTURY CENTER & PUBLIC WORKS LAND	$ 3,099,847	$ 2,909,372	$ 2,713,292	$ 2,511,650	$ 2,304,230	$ 2,091,004	$ 1,871,365	$ 1,871,365
ADAMS TRACT ($600,000)	$ -	$ 600,000	$ 560,000	$ 520,000	$ 480,000	$ 440,000	$ 400,000	$ 360,000
ROSEMARY ST PARKING LOT	$ 68,460	$ 45,640	$ 22,820	$ -	$ -	$ -	$ -	$ -
GO SIDEWALKS & GREENWAYS	$ 4,600,000	$ 4,600,000	$ 4,600,000	$ 4,600,000	$ 4,519,337	$ 4,435,874	$ 4,274,861	$ 4,116,820
LAND BANK - PARKING LOTS (2 @ $500,000)	$ -	$ -	$ -		$ -	$ 253,339	$ 246,666	$ 455,538
CONSTRUCTION - FIRE SUBSTATION ($2,524,825)	$ -	$ -	NA	$ 2,634,825	$ 2,386,503	$ 2,198,160	$ 2,019,858	$ 3,851,647
ADDITIONAL/FUTURE DEBT	$ 4,600,000	$ 4,600,000	$ 4,600,000	$ 7,134,825	$ 6,875,840	$ 6,680,160	$ 6,011,738	$ 9,385,817
TOTAL OUTSTANDING DEBT	$ 8,219,024	$ 4,239,832	$ 5,646,988	$ 12,239,272	$ 12,386,563	$ 13,509,329	$ 12,212,020	$ 11,356,665

% DEBT TO ASSESSED VALUATION	0.73%	0.74%	0.70%	0.83%	0.81%	0.86%	0.75%	0.68%
DEBT PER CAPITA	$471	$484	$465	$561	$519	$582	$533	$503
% DEBT SVC TO TOTAL BUDGET	8.58%	8.61%	8.18%	8.39%	10.28%	10.98%	12.08%	10.71%
POPULATION	17,585	17,648	17,648	18,500	18,870	19,247	19,632	20,025
ASSESSED VALUATION	$1,115,394,194	$1,182,604,280	$1,073,733,504	$1,483,245,480	$1,527,742,830	$1,573,675,115	$1,920,782,366	$1,866,405,639

Five Year Plan

Major Assumptions Used in Five-year Forecasting Plan

	FY06-07	FY07-08	FY08-09	FY09-10 & FY10-11
EXPENDITURES				
Salary & Wages:				
Fulltime, Overtime, Part-time, & Temporary Salaries:	5% per year			
Fringe Benefits:				
Fica (7.65%) Retirement (4.78% for police officers; 4.88% for all others), Supplemental Retirement (5% – Police Officers; 3% – all other employees)			17.43% of salaries for LEO; 15.53% non-LEO	
Health Insurance	15% per year			
Dependent Health/Retiree Insurance Subsidies	15% per year			
Service Level Benefits	2.5% per year			
LEO Early Separation Allowance	5.0% per year			
Operating Costs:				
General Operating Costs	3% per year			
Computers & Peripherals	PCs – GOAL: 4 yr replacement cycle; servers – 3 yr replacement cycle			
Affordable Housing	3% per year			
Governance Support	3% per year			
Landfill Fees	$1 increase in FY06-07; $2 increase per year following			
Transportation Costs	10% per year following FY06-07			
Human Services	5% per year			
Transfers To Other Funds	OWASA $20K	Reimburse Revolving Loan Fund for Gen	NA	NA

"What If Analysis in Excel" -- Death and Tax Rates in Blue Heaven

It is time to balance the budget in the Town of Blue Heaven.

- This year's expenditures were $10 million and are expected to grow 5% a year for the next five years.
- The current assessed property tax base is $2.5 billion, the town collects 97% of the assessed property taxes and the current tax rate is 41.3 cents per $100 of valuation. The property tax base is expected to grow 3% a year for the next five years.
- There are no other revenue sources.
- The town collected $10,015,250 this year so it has a small surplus equal to less than one-sixth of one percent.
- The town board says they want to keep the same tax rate for the next three years.

Given these assumptions, how would you decide:

1. What property tax rate is needed to:
   a. Balance the budget in Year 1?
   b. Balance the cumulative budget over Years 1-3 assuming you have to keep the same tax rate for all three years?
2. What would the effect be of different constant revenue growth rates ranging from 0% to 6%?
3. What would be the effects of different revenue growth rates ranging from 0% to 6% and different expenditure growth rates ranging from 4% to 10%?

What If Spreadsheet Example

	Current	Year 1	Year 2	Year 3	5 year Budget
Assessed Property	$2,500,000,000	$2,575,000,000	$2,652,250,000	$2,731,817,500	$7,959,067,500
Growth		3%	3%	3%	
Tax Rate per $100	$ 0.4130	$ 0.4130	$ 0.4130	$ 0.4130	
Collection Rate	97.0%	97.0%	97.0%	97.0%	
Revenues	**$10,015,250**	**$10,315,708**	**$10,625,179**	**$10,943,934**	**$31,884,820**
Expenses	**$10,000,000**	**$10,500,000**	**$11,025,000**	**$11,576,250**	**$33,101,250**
Growth		5%	5%	5%	
Balance	**$15,250**	**-$184,293**	**-$399,821**	**-$632,316**	**-$1,216,430**
Pct of Expenses	**0.2%**	**-1.8%**	**-3.8%**	**-5.8%**	**-3.8%**

"What If" Analysis with Excel

TOOL	What it does	Example	What you need
GOAL SEEK	Goal Seek allows you to work backwards and find the necessary number to produce a final answer you want.	"What does the tax rate need to be to balance the budget"	• A target or goal cell (must be a formula) • A changing cell that affects the target cell indirectly or directly (must be an actual number)
DATA TABLES	Allows you to test multiple values for 1 or 2 variables all at once to answer "what if" questions.	"What effect does varying growth in expenditures from 3% to 10% have on the budget?"	• One or two changing cells (must be actual numbers) • One or more outcome cells to show the effect of varying the changing cells (should be formula)
SCENARIOS	Scenarios allow you to save different versions of your spreadsheet so you can put together sets of assumptions and save them so that you can easily move between scenarios as well as see the effect of different scenarios in one table.	"How do my different budget scenarios compare?"	• Changing cells that you may substitute with different values • Results cells that show particular outcomes you want to see.

Where to find these tools:

In Excel 2007 to 2013 – Under "DATA", "Data Tool", "What If Analysis"

In Excel 2003 or MAC Excel – Under "Tools", "Goal Seek", "Data Table", or "Scenarios"