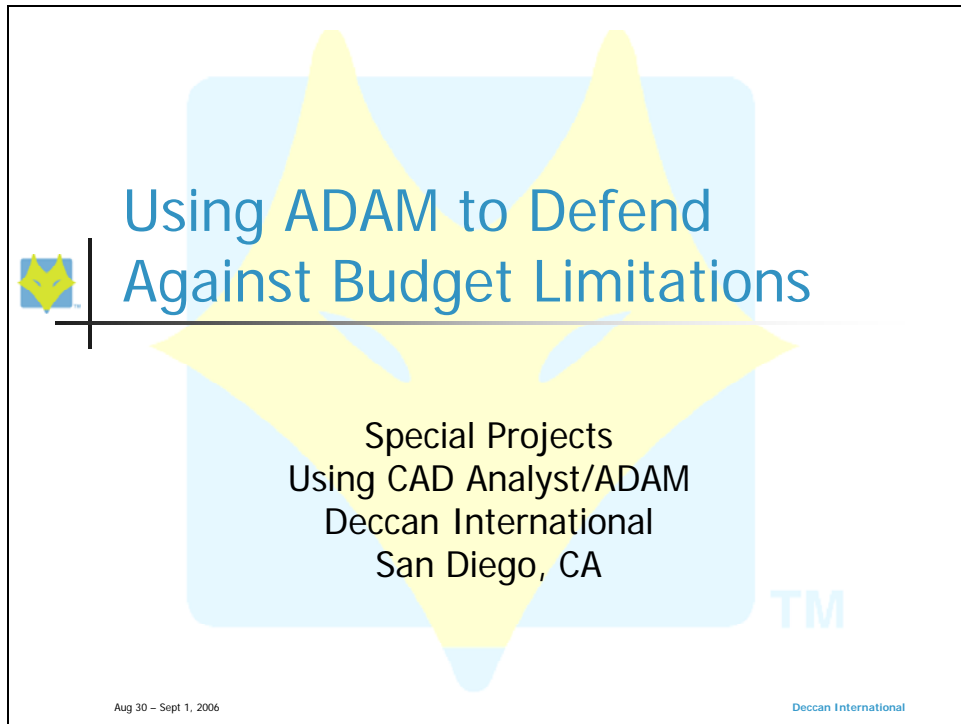




USING ADAM TO DEFEND AGAINST BUDGET LIMITATIONS



Using ADAM to Defend Against Budget Limitations:

In this lesson you will learn how you can use ADAM as a decision support tool to defend your budget.

You will also learn the concepts relating to the lesson and the skills needed to setup and achieve the goals of this lesson.



Overview

- Why is budget defense crucial?
- Lesson Objectives
- Tasks to be done
- Concepts covered
- Skills required
- Exercise

Overview:

You will understand the motivation of the lesson, the objectives that we wish to accomplish, tasks to be done as a part of the lesson, concepts driving the lesson and skills needed to know and towards the end you will be given an exercise to actually practice what you learnt.



Why?



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- Helps avoid severe budget cuts by showing its negative consequences
- Create a data-backed argument to fund apparatus
- 2006: ADAM scenarios helped defend station closures at Cincinnati Fire and no stations were closed

Why?

ADAM can provide data supported maps to enhance presentations that are prepared to make a case for budget defense. ADAM can help avoid major budget cuts by showing some of their negative consequences. One such example was in Cincinnati early 2006 when ADAM helped defend station closure and no stations were closed.



Objectives

- Learn how to prepare scenarios with proposed deployment changes using ADAM
- Evaluate impact of proposed changes on response performance

Objectives:

The objective of this lesson is to learn how to prepare scenarios with proposed deployment changes to defend budget and evaluate their impact on response performance to help make the case.



Tasks to be done

1. Review current performance
2. Create ADAM scenarios with deployment changes reflecting budget cuts
3. Compare response performance of above scenarios with base scenario

Tasks to be done:

As a part of the tasks needed to accomplish the goal, you would review the current performance, create ADAM scenarios with deployment changes reflecting budget cuts and compare the response performance of the above created scenarios with the base scenario.



Concepts needed

- Budget defense
- Budget defense measures
- Understanding Unit Types and Capabilities

Concepts Needed:

Some of the concepts covered in the lesson are “**Budget Defense**”, “**Budget Defense Measures**” and “**Understanding Unit Types and Capabilities**”. These would help explain what causes budget limitations, alternate deployment options and how you can explore one possible deployment option in detail.



Concept: Budget defense

- Decrease in city tax shared by all agencies including fire
- Grant funding shortages

Budget Defense:

Budget limitations can be caused by many factors. If a city decides to cut taxes, revenue may have to come from various departments including the fire department; this can cause a limitation in budget. There may also be shortages in grant funds. The above two are among many other causes for limitations in budget.



Concept: Budget defense measures

- Explore alternate staffing mechanism
- Explore alternate revenue sources
- Explore alternate deployment options
- Evaluate department policy changes
- Possibility of introducing shift based deployment schemes
- Career Vs. Volunteer

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Budget defense measures:

Various deployment measures are sought after by different departments to cope with budget cuts. Some of them are listed below:

- Exploring alternate staffing mechanism
- Exploring alternate revenue sources
- Exploring alternate deployment options
- Evaluating department policy changes
- Possibility of introducing shift based deployment schemes
- Career Vs. Volunteer

Example: Budget restrictions force you to reduce staffing by 36 Firefighters. Assuming that to staff one position round the clock, accounting for absences, you would need 6 firefighters, your options would be then to either close down 2 engines with 3 Firefighters each or reduce the staffing of 6 engines from 4 to 3 firefighters each.



Concept : Understanding Unit Types and Capabilities

- Current structure of unit types and capabilities in ADAM
 - Located in “Configurations” folder
 - “unit types and their capabilities.dbf” table

Understanding Unit Types and Capabilities:

Currently, the information about the capabilities that are supported by each unit type is located in “**Configurations**” folder in the file named as “**Unit types and their capabilities.dbf**”. This file contains all the unit types and all the capabilities that are modeled in ADAM.



Concept : Understand Unit Types And Capabilities (Cont'd)

<input type="checkbox"/>	Unittype	Unittypdesc	Unit	Pf	Emt	Paramedic	Chief	Engine	Ladder	Squad	Extric
<input type="checkbox"/>	ARROW	Arrow Ambulance			2	1					
<input type="checkbox"/>	C	Chief Car		1	1		1				
<input type="checkbox"/>	E_3	Engine with 3FF	1	3	3			1			
<input type="checkbox"/>	E_3M	Engine, with 3FF, Mutual Aid	1	3	3			1			
<input type="checkbox"/>	NIM	Not In Model									
<input type="checkbox"/>	PRO	Professional Ambulance			2	1					
<input type="checkbox"/>	T_2	Truck with 2FF	1	2	2				1		
<input type="checkbox"/>	T_2Ex	Truck with 2FF, WITH EXTRICATI	1	2	2				1	1	1
<input type="checkbox"/>	T_2M	Truck with 2FF, Mutual Aid	1	2	2				1		
<input type="checkbox"/>	T_3	Truck with 3FF	1	3	3				1		
<input type="checkbox"/>	R_3	Rescue Squad with 3FF	1	3	3					1	1
<input type="checkbox"/>	EP_3	Paramedic Engine with 3FF	1	3	3	1		1			
<input type="checkbox"/>	Q_3	Quint with 3FF	1	3	3			1	1		

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Understanding Unit Types and Capabilities (cont'd):

The above figure shows the contents of the file “unit types and their capabilities.dbf”. The first column lists all the unit types that are modeled in ADAM and the second column gives a description for each unit type. From the fourth column to the last column, each of them stand for the capabilities that are modeled in ADAM. Therefore, as can be seen from the above figure, the capabilities modeled for a unit type can be deduced from this table.

Example: For the unit type of T_2 (Truck with 2 fire fighters), it can be deduced that it has 2 fire fighters, 2 EMT and has the ladder capability.



Concept : Understand Unit Types And Capabilities (cont'd)

- Can create multiple capability units
 - By using existing unit type that has multiple capability
- or
- By Adding new unit type in ADAM

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Understanding Unit Types and Capabilities (cont'd):

Now from the table structure of “**unit types and capabilities.dbf**” file, since we can identify the capabilities that each unit type models, we can identify the unit types that can have multiple capabilities.

Example: For the unit type of Q_3 (Quint with 3FF), it can be observed that it has 3 fire fighters, 3 EMTs, engine capability and ladder capability.

There are two ways of creating adding capabilities to a particular unit type

- By changing the current unit type to a unit type that has multiple capabilities (can be done on-the-fly in ADAM)
- By adding a new unit type that has multiple capabilities.

Here, it should be noted that the second option of adding a new unit type to the above table involves changes not only in “**unit types and their capabilities.dbf**” file, but also in various other files. Therefore, it is advised that if you are adding new unit types, please contact DECCAN for more details on making appropriate changes.



Skill: Open DBF Files in MapInfo

- Open a new MapInfo session
- Select the file type "dBASE DBF (*.dbf)"
- Locate the concerned dbf file and open it

Skill: Open DBF files in MapInfo

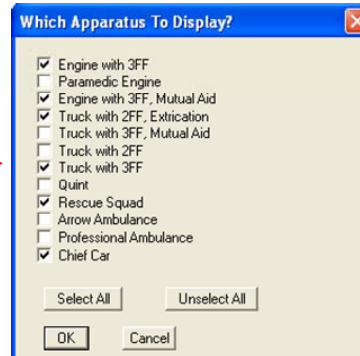
The files of type "DBF" can also be opened in MapInfo session.



Skills: Displaying apparatus

- Specify Which Apparatus are Displayed by clicking on: 

Check the apparatus that you want to be displayed



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
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Skill: Specify Which Apparatus Are Displayed

For selecting the specific apparatus to be displayed, click on the display apparatus button as shown in the above figure to display a window titled as **“Which apparatus to display?”** This window shows the description of all the unit types that are being used in ADAM. Here, you can check all those unit types that you want to be displayed and press ‘ok’ for displaying them on the map.



Skills: Change unit type

- Click on  to modify the capabilities of a unit.
- Select the units whose capabilities you would like to change and make the necessary changes.

Skill: Change Unit Type of Unit(s):


There are two ways to change a unit type on-the-fly.

1. If you click on the white arrow button, you can change the unit types of units individually at each station.
2. If you click on the black arrow button, you can change the unit types of more than one unit at once.

So, for the example given before, you could reduce the staffing of 6 engines from 3 to 2 firefighters each.



Skill: Run ADAM Analysis


- Click on pencil button on the toolbar for doing the analysis. 

Skill: Run ADAM analysis

Click on the pencil button as shown above to run ADAM analysis.



Skill: Save ADAM Scenario

- Click on the save button to save the current scenario 

Skill: Save ADAM Scenario

Click on the save button as shown in the above figure to save ADAM scenario.

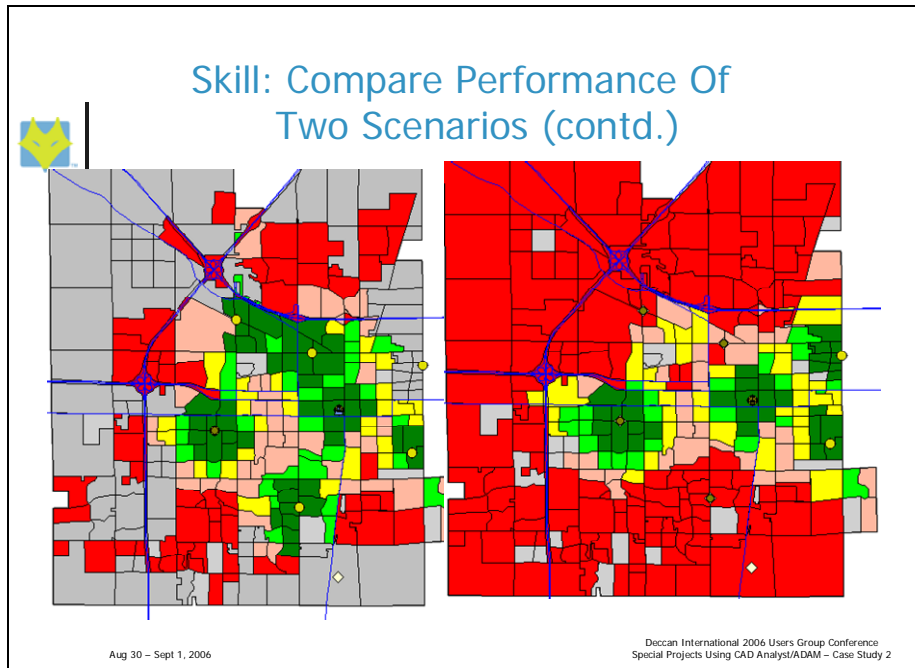


Skill: Compare Performance Of Two Scenarios

- Evaluate new scenario.
- Take a snapshot.
- Note down the current values for incident and coverage performance.

Skill: Compare Performance of Two Scenarios

Show possible effects of budget cuts by comparing the scenarios.



Scenario where the staffing of 6 engines is reduced from 3 to 2 firefighters each: Initial attack force is affected.

Skill: Compare Performance of Two Scenarios

You can take screen shots of the maps from the two scenarios to be compared and place them side by side by pasting them into a “Word” or “WordPad” document. Color Coding can be compared on the two maps for the area of interest. “**Dark Green**” would imply very good performance and “**Dark Red**” would imply poor performance. A corresponding color change in a given area would imply whether the performance improved or worsened.



Skill: Compare Performance Of Two Scenarios (Cont'd)

- Numeric Scores
 - Average Performance
 - Percentage Performance

Response Criteria	Average Score		Percentage Score	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Initial Attack force	4:43	5:19	73%	56%

Skill: Compare Performance Two Scenarios (Cont'd)

You can compare the numeric scores for the two scenarios by entering the **Average** and the **Percentage** scores for any given response criterion. Comparing values from the two scenarios, an increase in the **Average** score implies a drop in performance and an increase in **Percentage** score implies an improvement in performance.