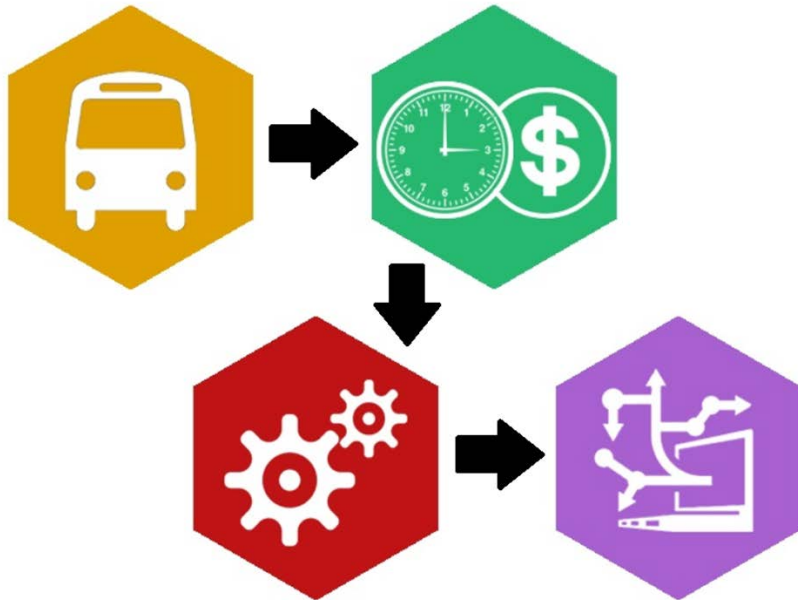


TWO VARIABLE COST ALLOCATION CALCULATOR ACCESS VERSION WEBINAR



PRESENTERS



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PRESENTATION OVERVIEW

- Importance of cost allocation
- Discussion of two-variable methodology
- Overview of the Access application version
- Stages of data input for the application
- Allocation outputs and reports
- Further uses of results for transit agencies

WHAT IS THE CALCULATOR?

- Application tool to help transit agencies accurately allocate costs
- Built on both Microsoft Excel and Microsoft Access, with the same functionality
- Requires no special skills in Access to use the calculator tool
- Relies on standard transit agency data – no new data collection is necessary
- Can be used to allocate costs to individual routes/services or groups of routes
 - Federal grant programs, contracts with human service agency, modes of service, purchased transportation, UZAs and geographic jurisdictions

WHY TWO-VARIABLES?

Transit costs will vary based both on time and distance

- Time measured by total vehicle hours
- Distance measured by total vehicle miles

Consider the following example:

- A route operates 11.25 revenue hours and 166 revenue miles per day
- A route operates 12.00 revenue hours and 166 revenue miles per day

Do these two routes cost the transit agency the same to operate?

KEY DEFINITIONS

- **Fully Allocated Cost:** represents the full cost of a transit route or service, including all costs incurred by the transit agency—both variable and fixed.
- **Variable Costs:** costs that are mainly a function of the amount of service provided (Ex. fuel, parts, and driver wages)
- **Fixed Costs:** costs that do not change with the amount of service provided (Ex. facility maintenance, administration salaries, computers)
 - **Direct Costs:** costs associated with assets and functions owned by the transit agency
 - **Indirect Costs:** indirect fixed costs are those associated with functions or assets utilized (but not directly managed by) the transit agency

ACCOUNTING METHODOLOGY

Two variable cost allocation by Vehicle Hours and Vehicle Miles

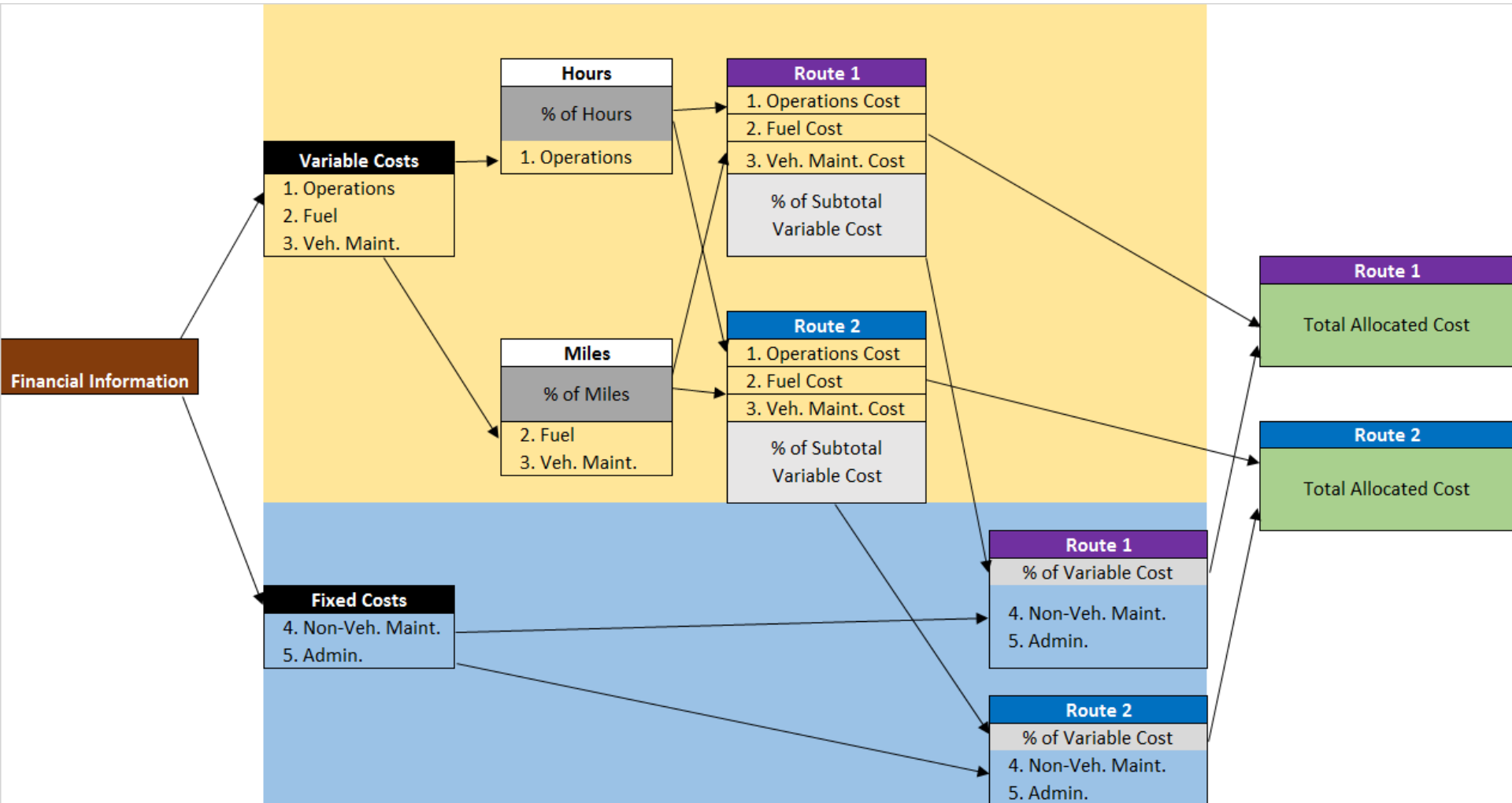
Variable Costs

- Allocated by Vehicle Hours and Miles
- Operations (excluding Fuel) by % hours
- Vehicle Maintenance and Fuel by % miles

Fixed Costs

- Allocated based on the % of variable costs
- Non-Vehicle Maintenance and Administration

METHODOLOGY SCHEMATIC



APPLICATION METHODOLOGY— FOUR-STEP PROCESS



1. Service Data



2. Financial Data





3. Operational Data



4. Allocate Costs




OVERVIEW OF ACCESS COMMANDS

- **Navigation** – Buttons on the Navigation Menu to open tabs
- **Saving Data** – Application saves data as you enter it
 - Also has save buttons throughout the application tabs
- **Status** – shows the total number of data points currently entered
- **Data Selection** – Multiple ways to select and edit data
 1. Move between selections using **the Left and Right Arrow** buttons
 
 2. Click on a selection in the data list on the page

OVERVIEW OF ACCESS COMMANDS



- **Deleting Data** – multiple methods to delete data in the database
 - ❑ Selecting a record and click the Delete button 
 - ❑ Clear all records with the **Reset Data for a New Year's Allocation** button on the Navigation Menu
 - ❑ Clear sets of records with the **Delete Data Batches** button on the Navigation Menu
- **Return to Start** – Click the **Save & Close Form** button to return to the Navigation Menu






Software License

Access application can be used with a current software license by downloading the Microsoft Access 2016 Runtime extension online





NAVIGATION MENU

- Application opens on the Navigation Menu page
- Buttons link to each step of the allocation process
- Steps 1 through 3 be completed in order before allocating costs in Step 4
- Menu also includes options for management of the database

Navigation Menu

Step	Description	Status
 Step 1: Enter Service Data	Enter your list of services (e.g., routes and programs).	0 service(s) entered
 Step 2: Enter Financial Data	Enter your operating expense data.	0 expense(s) entered Total value: \$0
 Step 3: Enter Operational Data	Enter operational data for each service (e.g., vehicle hours and miles)	0 service(s) have complete operational data
 Step 4: Run Cost Allocation	<i>Perform cost allocation. This may take a few seconds.</i> <i>*Note: you must re-run Step 4 if you change any data in Steps 1, 2, or 3*</i>	STOP! You need to complete Steps 1, 2, and 3 before running the cost allocation
 View Reports	View cost allocation results. (Opens the reports menu.)	STOP Run Step 4 before viewing reports

Database Management

 Export Data	Export the data you entered into Excel.
 Reset Data for a New Year's Allocation	Start a new fiscal year's report. (Only deletes financial and operational data. Services, service areas, and sponsors stay unchanged.)
 Delete Data Batches	Open a form to delete batches of data (e.g., all services, all sponsors, etc.)
 Exit	Exit the database

STATUS

- Shows the number of data records currently entered in Steps 1 through 3
- Updates automatically as records are edited in each tab.
- Status windows for Step 4 will state whether to “GO IF READY” to allocate cost information or “STOP” to go back to previous steps
- View Reports status shows if the reports are ready to view once costs are allocated

The screenshot shows a 'Status' window with five stacked panels, each with a light gray background and a thin border. The panels contain the following text from top to bottom:

- 1 service(s) entered
- 6 expense(s) entered
Total value: \$7,172.00
- 1 services have complete operational data
- GO IF READY
Service and Financial Data Exist
- GO IF READY
You have allocation results ready for reporting



Service Data — *Characteristics of the Routes and Services*

- **Route / Service Name:**
Given name of the service
- **NTD Mode:** Options include nine fixed-route and demand responsive travel modes
- **NTD Jurisdiction:**
Options include Urbanized Area (UZA) or Rural Area
- **Service Type:** Options include Directly Operated or Purchased Transportation
- **Sponsored Type:** Options include General Public Service or Sponsored
- **Funding Source:** Options include Section 5307 Urbanized, Section 5311 Non-Urbanized, Section 5310 Elderly & Disabled, or other sources

The screenshot shows a web application interface for 'Step 1 - Service Data'. The interface includes a navigation menu with 'Navigation Menu' and 'Service Data' tabs. The main content area contains several input fields and buttons:

- Route / Service Name:** A text input field.
- NTD Mode:** A dropdown menu.
- NTD Jurisdiction / Area:** A dropdown menu with a 'View / Edit Areas' button to its right.
- Sponsored Type:** A dropdown menu.
- Service Type:** A dropdown menu.
- Federal Funding Source:** A dropdown menu with a 'View / Edit Funding Prog.' button to its right and a 'Multiple sources?' link.

At the bottom of the form, there are several action buttons: 'Save', 'Save & Add a New Service', 'Delete', and 'Save & Close Form'. Below the form is a table with columns for 'Route / Service Name', 'NTD Mode', 'NTD Jurisdiction / Area', 'Sponsored Type', 'Service Type', and 'Federal Funding S'.

Service Data — *Characteristics of the Routes and Services*



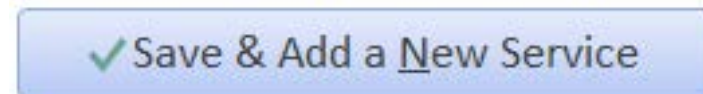
Data Editing Methods

- **Edit A Route/Service** – navigate to the record using the **left arrow** and **right arrow** buttons *or* click on the route/service to highlight and edit the record

- **Delete A Route/Service** – navigate to a record to highlight it, then click **Delete** button



- Click the **Save & Add a New Service** button to save the route/service and reset the data entry blanks for the next entry



- Once finished, click the **Save & Close Form** button to return to the Navigation Menu



Service Data — *Characteristics of the Routes and Services*



Some route/service characteristics can be customized from the preset options:

Route/Service Name

To allocate costs for a route that operates in two different areas, input the route name twice with an applicable sub-description.

- Ex. “Route 1 – Rural” and “Route 1 – Urban”

NTD Jurisdiction

Click the View / Edit Areas button to open the Service Areas, then edit the names of the UZA or add a new geographic area

- Ex. “UZA - Waco” or “McLennan County”

Federal Funding Source

Click the **View / Edit Funding Prog.** button to open the Funding Program tab. Type in the bottom row to name and code the new funding program.

- Ex. “Head Start” or “Local Contract”

Service Data — Characteristics of the Routes and Services



Route / Service Name

NTD Mode

NTD Jurisdiction

Sponsored Type

Service Type

Federal Funding

Route / Ser
Route 1

Route / Service Name	NTD Mode	NTD Jurisdiction / Area	Sponsored Type	S
Route 1	Demand Response	Rural area (non-UZA)	General Public	Directl



Financial Data — *Expenses information from Chart of Accounts*

- **USOA Object Class:**

Select the appropriate USOA Object Class for the expense from the available options

- **USOA Subclass:**

Select the appropriate subclass for the expenses from the available options, corresponding with the use of the expense for the transit agency

Step 2 - Financial Data

Cost Data Entry

Record 1 of 0 Total Costs Accounted:

USOA Object Class

USOA SubClass

Annual Cost

Cost Applicability

- All Services
- A specific mode
- A specific funding program
- A specific service area
- A specific operations type (DO or PT only)
- A specific service (or services)

Save Save & Add a New Cost Entry Delete View All Cost Entries

Save & Close Form *If you have a lot of specialized costs, this may take a few seconds...*

Summary of Entered Costs

Code Group	Title	Vehicle Operations	Fuel	Vehicle Maintenance	Non-Vehicle Maintenance	Administration	Total					
Grand Total												

- **Amount Cost:** Write in the amount of the expense using numeric text only; no commas are necessary


Financial Data —



Expenses Information from Chart of Accounts

Data Editing Methods

- **Edit A Cost Entry**– navigate to the record using the **left arrow** and **right arrow** buttons *or* click on the cost entry to highlight and edit the record
- **Delete A Cost Entry** – navigate to a record to highlight it, then click **Delete** button
- Click the **Save & Add a New Cost Entry** button to save the cost entry and reset the data entry blanks for the next entry
- Once finished, click the **Save & Close Form** button to return to the Navigation Menu

A red rectangular button with rounded corners. On the left side, there is a small white trash can icon. To the right of the icon, the word "Delete" is written in white text.A light blue rectangular button with rounded corners. On the left side, there is a small green checkmark icon. To the right of the icon, the text "Save & Add a New Cost Entry" is written in dark blue text.A light blue rectangular button with rounded corners. On the left side, there is a small blue arrow icon pointing to the left. To the right of the icon, the text "Save & Close Form" is written in dark blue text.



Financial Data — Expenses information from Chart of Accounts

Cost Applicability

- For each cost entry, choose the routes/services to which the cost applies

Cost Applicability

All Services

A specific mode

A specific funding program

A specific service area

A specific operations type (DO or PT only)

A specific service (or services)

- Click the multiple-choice button in the Cost Applicability box that corresponds with the service; then the appropriate dropdown options will appear
- If the expense is applicable to all routes use the “All Services” choice

	RtSvcName	NTDMode
<input type="checkbox"/>	Route 1	Commuter Bus
<input type="checkbox"/>	Route 2	Demand Respo

< >

OK Cancel

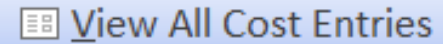
Select Mode

ID	ModeName
CB	Commuter Bus
DR	Demand Response
DRT	Demand Response Taxi
MB	Motor Bus
OTR	Other
VP	Vanpool
VLN	Volunteer

Financial Data — Expenses information from Chart of Accounts

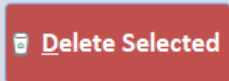






View All Cost Entries

View All Cost Entries

- Within the Cost Entries List tab, click the View All Cost Entries button
- Allows view of the existing cost entries by each separate expense entry rather than aggregated expenses by transit cost function
- The bottom of the form displays the grand total of expenses entered

Cost Entries List

Edit	Cost ID	USOA Object Class	USOA Sub Class	Annual Cost	Cost Applies to	
	24	Salaries and Wages	5011.1 Operator	\$330,000.00	All	<input type="checkbox"/>
	25	Salaries and Wages	5011.2 Dispatcher	\$170,000.00	All	<input type="checkbox"/>
	26	Salaries and Wages	5011.4 Vehicle Maintenance	\$170,000.00	All	<input type="checkbox"/>
	27	Salaries and Wages	5011.5 Non-Vehicle Maintenance	\$80,000.00	All	<input type="checkbox"/>

Financial Data —

Expenses information from Chart of Accounts



Cost Data Entr

Cost Data Entry

Record 2 of 1

Total Costs Accounted: \$100,000.00

USOA Object Class

USOA Object Class

USOA SubClass

USOA SubClass

Annual Cost

Annual Cost

Cost Applicability

- All Services
- A specific mode
- A specific funding program
- A specific service area
- A specific operations type (DO or PT only)
- A specific service (or services)

Save

Save & Close Form

Save

Save & Add a New Cost Entry

Delete

Summary of Er

Save & Close Form

If you have a lot of specialized costs, this may take a few seconds...

Summary of Entered Costs

Code Group	Title	Vehicle Operations	Fuel	Vehicle Maintenance	Non-Vehicle Maintenance
Grand Total		\$100,000.00			



Operational Data— *Information for each route/service*

- **Revenue Hours:** Number of revenue hours for the route/service
- **Vehicle Hours:** Number of total vehicle hours for the route/service
- **Revenue Miles:** Number of revenue miles for the route/service
- **Vehicle Miles:** Number of total vehicle miles for the route/service.

Route / Service	Mode	Revenue Hours	Vehicle Hours	Revenue Miles	Vehicle Miles	Passenger Trips
Route 1	Motor Bus					
		Total				

** Revenue hours/miles must be less than or equal to vehicle hours/miles **

- **Passenger Trips:** Number of passenger trips for the route/service.


Operational Data --

Information for each route/service




Data Editing Methods

- **Edit A Route/Service** – navigate to the record using the **left arrow** and **right arrow** buttons *or* click on the route/service to highlight and edit the record
- Click the **Save & Go to Next Service** button to save the route/service and reset the data entry blanks for the next entry

A light blue rectangular button with rounded corners. It features a green checkmark icon on the left, followed by the text "Save & Go to Next Service".

✓ Save & Go to Next Service

- Once finished, click the **Save & Close Form** button to return to the Navigation Menu

A light blue rectangular button with rounded corners. It features a small icon of a document with a blue arrow pointing left on the left side, followed by the text "Save & Close Form".

Save & Close Form



Operational Data — *Information for each route/service*

Suballocation for Shared Ride Demand Responsive

Uses passenger hours and passenger miles to suballocate costs for modes indicated as Sponsored Service

Passenger Hours and Miles Data to Allocate Sponsored Services

- **Sponsor:** Name of the sponsored service. In the Sponsored Services Data tab, first click Edit/View Sponsors to enter names of sponsored routes.
- **Passenger Hours:** Number of passenger hours for the sponsored service
- **Passenger Miles:** Number of passenger miles for the sponsored service
- **Passenger Trips:** Number of passenger trips for the sponsored service

Route / Service	Sponsor	Passenger Hours	PassMiles	Passenger Trips
Route 2				
*				

Operational Data — Information for each route/service



Route / Service:

Mode:

Revenue Hours: Vehicle Hours:

Revenue Miles: Vehicle Miles:

Passenger Trips:


Route / Service	Route / Service	Mode	Revenue Hou	Vehicle Hour	Revenue Mile	Vehicle Miles	Passenger Trips
Route 1	Route 1	Demand Response	400	500	20,000	24,000	1,500
Route 2	Route 2	Motor Bus					
Route 3	Route 3	Vanpool					
	Total		400	500	20,000	24,000	1,500

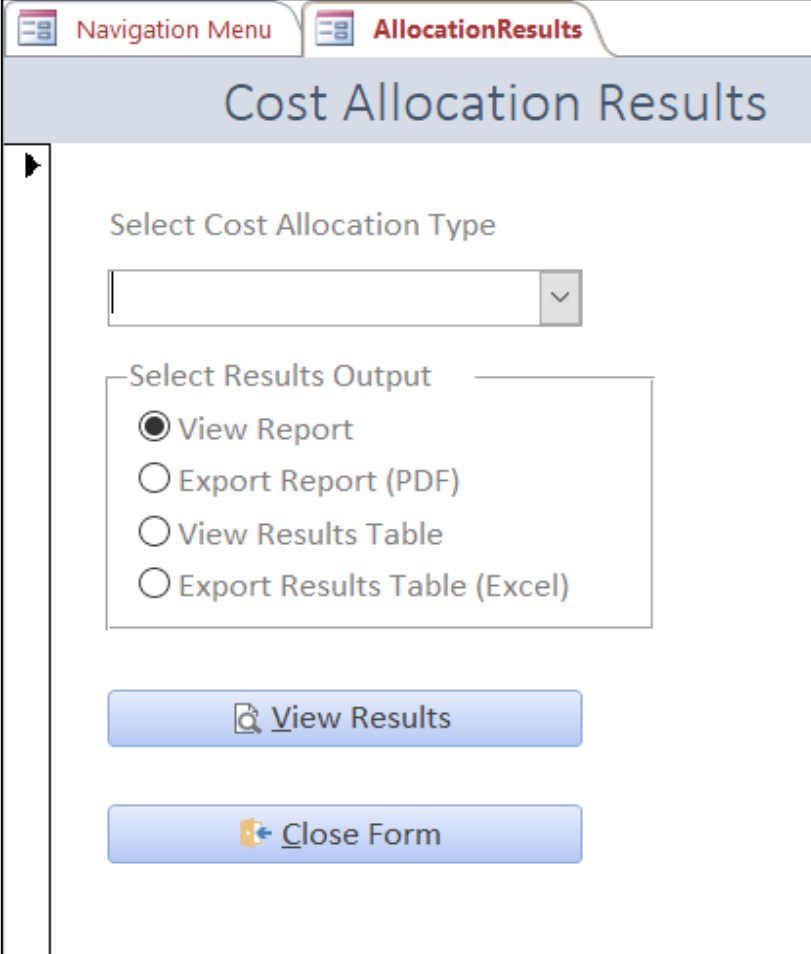


Allocate Costs —

Putting the three data sets together

Allocate expenses information at the push of a button once data has been entered in the previous steps

- Click **Step 4: Run Cost Allocation** button on the Navigation Menu. Allocation will run and navigation will go to Cost Allocation Results tab
- Or click **View Reports** button to open the Reports tab 
- Choose the Cost Allocation Type and Output format type before clicking **View Results**



Navigation Menu AllocationResults

Cost Allocation Results

Select Cost Allocation Type

Select Results Output

- View Report
- Export Report (PDF)
- View Results Table
- Export Results Table (Excel)

[View Results](#)

[Close Form](#)



Allocate Costs —

Putting the three data sets together

View Reports Options

- **View Reports:** opens a tab on the fully allocated cost and performance measures for the selected option

Allocation Results by Mode												Tuesday, April 30, 2019 3:44:37 PM	
NTD Mode	Vehicle Operations	Vehicle Operations - Fuel	Vehicle Maintenance	General Administration	Non-Vehicle Maintenance	Total Allocated Cost	Pass. per Revenue Mile	Cost per Revenue Hour	Cost per Revenue Mile	Cost per Total Vehicle Hour	Cost per Total Vehicle Mile	Cost per Passenger Trip	
Commuter Bus	\$241,719.27	\$22,527.00	\$102,980.56	\$37,897.51	\$28,423.13	\$433,547.47	0.12	\$72.26	\$2.99	\$61.94	\$2.91	\$25.50	
Demand Response	\$185,983.97	\$14,362.85	\$68,290.33	\$50,516.71	\$20,792.35	\$339,946.20	0.03	\$84.99	\$5.15	\$62.95	\$3.58	\$147.80	
Motor Bus	\$1,045,363.72	\$96,760.26	\$449,340.92	\$228,401.68	\$123,178.40	\$1,943,044.99	0.40	\$62.68	\$3.66	\$50.47	\$3.04	\$9.25	
Vanpool	\$62,533.04	\$6,349.89	\$29,388.19	\$13,184.10	\$7,606.12	\$119,061.34	0.05	\$70.04	\$2.83	\$70.04	\$2.83	\$62.66	
Grand Total	\$1,535,600.00	\$140,000.00	\$650,000.00	\$330,000.00	\$180,000.00	\$2,835,600.00	0.29	\$66.41	\$3.62	\$53.91	\$3.06	\$12.26	

- **Export Report (PDF):** launches a prompt to save a PDF version of the report for the selected option.



Allocate Costs —

Putting the three data sets together

View Reports Options

- **View Results Table:** opens a tab on the fully allocated costs and performance measures in a table format rather than a report

NTDMode	SumOfTotalVehOp:	SumOfTotalVehOpsFuel	SumOfTotalVehMain:	SumOfTotalGenAdrr	SumOfTotalNonVehM	SumOfTotalCost	SumOfPassTrips1	Passengers per Revenue	Cost per Rev	Cost per Rev
Commuter Bus	\$241,719.27	\$22,527.00	\$102,980.56	\$37,897.51	\$28,423.13	\$433,547.47	17,000	0.12	\$72.26	\$2.99
Demand Response	\$185,983.97	\$14,362.85	\$68,290.33	\$50,516.71	\$20,792.35	\$339,946.20	2,300	0.03	\$84.99	\$5.15
Motor Bus	\$1,045,363.72	\$96,760.26	\$449,340.92	\$228,401.68	\$123,178.40	\$1,943,044.99	210,000	0.40	\$62.68	\$3.66
Vanpool	\$62,533.04	\$6,349.89	\$29,388.19	\$13,184.10	\$7,606.12	\$119,061.34	1,900	0.05	\$70.04	\$2.83
Total	\$1,535,600.00	\$140,000.00	\$650,000.00	\$330,000.00	\$180,000.00	\$2,835,600.00	231,200			

- **Export Results Table (Excel):** launches a prompt to save an Excel version of the allocation results table for the selected option

Allocate Costs —

Putting the three data sets together



[Navigation Menu](#)
[AllocationResults](#)

Allocation Results by Mode

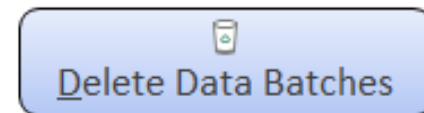
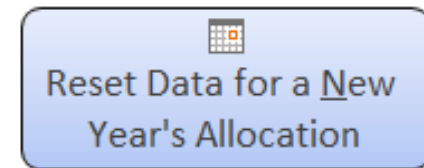
NTD Mode	Vehicle Operations	Vehicle Operations - Fuel	Vehicle Maintenance	General Administration	Non-Vehicle Maintenance	Total Allocated Cost
Demand Response	\$41,666.67	\$10,549.45	\$7,912.09	\$5,466.20	\$21,864.80	\$87,459.21
Motor Bus	\$66,666.67	\$11,868.13	\$8,901.10	\$7,948.72	\$31,794.87	\$127,179.49
Vanpool	\$41,666.67	\$17,582.42	\$13,186.81	\$6,585.08	\$26,340.33	\$105,361.31
Grand Total	\$150,000.00	\$40,000.00	\$30,000.00	\$20,000.00	\$80,000.00	\$320,000.00

Database Management

Resetting and deleting the database

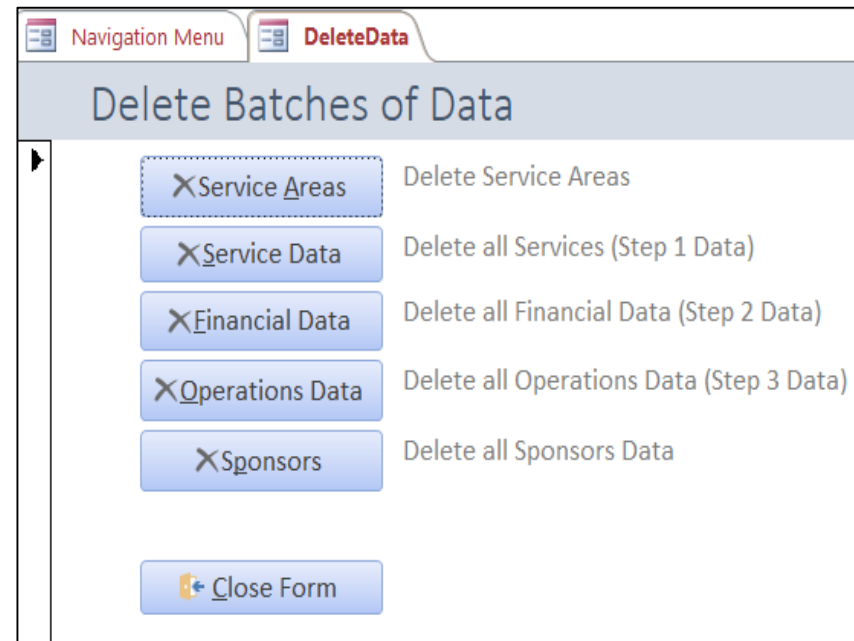
Reset Data

Click the **Reset Data for a New Year's Allocation** button to clear all financial data, operational data, and prior cost allocation results



Delete Batches of Data

Click the **Delete Data Batches** button on the Navigation Menu to open the Delete Batches of Data tab



Clicking any option will show a prompt asking to confirm the deletion selection

RESULTS AND OUTCOMES

- Create a consistent, equitable, transparent allocation process
- Report data to NTD / prepare data for State reporting
- Know cost of services and measure performance
- Use for planning and pricing services
- Understand costs by funding source
- Prepare information for monthly requests for reimbursements
- Automating accounting and financial reporting processes
- Budget future operating expenses and funding need

AVAILABLE ONLINE

- Today's PowerPoint
- Today's webinar recording
- Both application versions
- Instruction manual
- Data results Excel workbook

UPCOMING ANNOUNCEMENTS

Upcoming Financial Management Book

to published by National RTAP

Rich Garrity – RLS & Associates, Inc.

National RTAP Conference

September 15-18, 2019

DoubleTree by Hilton

Portland, Oregon

<https://www.nationalrtap.org/News/2019-Conference>

In partnership with Oregon Department of Transportation



4th National RTAP
Technical Assistance Conference
Charting New Trails
FOR **Rural & Tribal Transit**

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