Please see Mantis Tickets 5020 and 5124 for project documentation.

Basic idea, web designers and developers will have the freedom to change colors, graphics, flow, etc.

Tool Main Menu:

Welcome to the Fleet Life Cycle Cost Tool!

In an effort to embrace conservation of natural resources and looking toward the future, our sustainable operations team, fleet managers and EMS project coordinators have been working together to create this tool for all Forest Service employees to use in determining what vehicles to order in the reordering process. This tool has been designed with the intention of providing each of you information that you can use in the decision making process, but by no means is meant to dictate to you what vehicle is right for you.

So what would you like to do?       Select option below:

Compare your current FS vehicle to a new vehicle
Use the Vehicle Advisor to find options for new vehicles

Compare Only
Recommend and Compare

Exit Tool

Button or some way of letting the user chose an option

Additional specifications:

This tool should “invite” the user to participate. It should be simple and easy to use. The screens should be uncluttered yet a balance of information and interaction. It should be relatively easy to go back and change answers without losing previous inputs. The user input requirements should be evident as well as the “next step”. I am hoping for balance of “eye- catching flash” and tasteful design. I am not saying I achieved that here!!!
Option 1: Compare Current to New

This option will compare a vehicle that is currently part of the FS Fleet to a new vehicle. See what you can save by getting the right sized vehicle for the job!

Let’s get started!

Region: input option-Drop down LOV with the following choices [R1, R2...R10, WO, Research Station, Other]

Forest Number: User input: prompt for 2 digit Forest number

Current Fleet - Vehicle Number: User input: prompt for equipment number

Average Annual Mileage: User input (allow integers between 100 and 100,000)

Is biodiesel or Ethanol fuel used in this vehicle: input option- Yes/No (check box, radio button or LOV)

Go back  Continue button

Note: Do not let the user continue without answering all of the above questions.
Clicking the “Continue button” will display in the following information on the screen for the user to review:

(Title to be displayed to user in bold and source of value displayed, noted to the right)

Region/Forest
Region /Unit (Region/Forest: from user input)

Current Fleet-Vehicle Number
e/n (Current Fleet-Vehicle Number: from user input)

Average annual mileage
average annual mileage (from user input)

Biodiesel or Ethanol fuel used
Biodiesel or E85 used - Y/N? (from user input)

The user will be prompted to review information. They would be allowed to change/correct any of the input fields.

The following information will be needed for calculations and outputs. These will be stored in the EMIS_FLEET_DATA table but will not be displayed to user (note: with the exception of “today’s date the first value below is the actual field name in the EMIS table:

- std_eqp_cls (GSA Standard Item No-from EMIS)
- make (from EMIS-this is a coded value)
- model (from EMIS)
- year (vehicle year-from EMIS)
- 4x? (Driveline class-from EMIS)
- %rcv (EMIS Residual Value – needed in cost of ownership calcs
- cum_mtc (Cumulative Maintenance-EMIS)
- life (Life Years or Vehicle Life-EMIS)
- date (EMIS date vehicle received – for calc annual maintenance costs)
- today’s date (for calc annual maintenance costs)
- capval (EMIS - Capital Value – purchase price)
- fuel (from EMIS-this is a coded value)
- ENG TYPE (from EMIS-this is a coded value, but would only be needed for checking for certain types of engines where fuel is not specific)

Note: If the EMIS database contains errors or omissions this would disallow the use of the comparison option, a message box would display that informs the user the “EMIS data in incomplete or in error for this vehicle, please contact your fleet manager, comparison impossible.” This message box would probably appear immediately before the comparison exercise is completed.

For EMIS field descriptions and coded values, please see the information in FleetToolCalc.docx
**Option 1: Compare Current to New**

If the information displayed below is correct, click **Continue**
If you would like to change any of your answers, click **Go back**

**Region:** 1  
**Forest Number:** 15  
**Current Fleet - Vehicle Number:** 6356  
**Average Annual Mileage:** 12,000  
**Is biodiesel or Ethanol fuel used in this vehicle:** No

**Go back**  
**Continue button**

*Clicking the “Continue button” will cause the user to be prompted to choose a vehicle for comparison. The list of available vehicles for the user to select from will come from the AVAILABLE_VEHICLE_DATA table. Probably will need to make it distinct on make/model.*
**Option 1: Compare Current to New**

Please select a vehicle available for purchase from the list.

This is where I am not exactly sure how the tool should work due to the fact that a single “Make” and “Model” may be represented multiple times in the Available Vehicles table. This is dependent upon the options, fuel types, etc.

Need to understand how many options should be available, just Make/Model, which then could return the info on all the records of that make and model that are in the table? Or give the user options, or compare drivelines, fuel to existing and match that? I would think the return of all would be the most straightforward, but would like to ask Steve/Tracy.

After this step the user would hit the COMPARE button and Viola!, a double blocked table would appear, the top block showing the current vehicle and the lower block(s) showing the vehicle(s) selected for comparison. Change selection would allow user to select a different vehicle from the available vehicles table. All output screen reports should have the ability to be saved and/or printed.

The Make/Model field for the comparison vehicles will be hyperlinked and when clicked on would bring up a screen with detailed information about that vehicle including a picture.

Detailed information will be populated from the AVAILABLE_VEHICLES table, VEHICLE_PICTURE table, and from user input. It will include a repeat of the information contained on the table example below as well as: Annual mileage, FuelType, DrivelineSystem, Hybrid, FlexFuel compatibility, NumberOfDoors, TowingCapacity, PickupBoxLength, and a picture. (Note where an item is unavailable or inapplicable, that will be noted. See page 12 of this document for an example of what the detailed info might look like.

*see FleetToolCalcs document for specifics on inputs to calculate the above values
Option 2: Recommend and Compare

First, answer a few questions about your vehicle needs and usage. This option will search the database for vehicles available to purchase and based on your answers. It will recommend vehicles that meet your requirements and compare costs, mpg, emissions and warranties of these recommended vehicles!

Note: Go back will take you back to Main Menu of Tool
Option 2: Recommend and Compare

1. **Use:** input option - Drop down box with the following choices [Pool vehicle, Project administration (1-2), Crew of 3-4, Crew of 5-6, Crew of 7-10, LEO, FMO]

2. **Road types driven on:** input option - Drop down box with the following choices [paved roads, all season roads, native surface, serious off-roading (linking to are you crazy! use an ATV)]

3. **Do you need pick-up bed space?** input option - Drop down box with the following choices [No, Short-box (6 ft or less), Long-box (8 ft or more)]
   *This notice displayed to educate and aid user in choice ** The only acceptable reason to consider a 8 foot bed is to haul construction material, ie.. ATV and Snowmobiles are not justification for longer bed length (FSH 6709.11)*

4. **Do you need towing capabilities?** input option – Check box or Radio button [no, yes] if yes, question 5 would be available, otherwise #5 would be hidden or ghosted.

5. **What is your GVWR requirement?** input option - Drop down box with the following choices [less than 4,000 lbs, between 4,000 and 6,000 lbs, between 6,000 and 8,000 lbs, greater than 8,000 lbs]

6. **Anticipated miles driven per year:** input option – input box [allowing numeric entry only with integers between 100 and 100,000]

7. **Do you live in an area where you are required to have a flex fuel vehicle?** input option – Check box or Radio button [No, Yes ] ** Note: Only will return vehicle choices that have a value in the FlexFuel field.**
   *This notice displayed to educate and aid user in choice ** MSA requirements as found in USDA Memorandum dated October 29, 2007 and APMR 110-34.35b.*

8. **Will you be using E85 or biodiesel in your vehicle?** input option – Check box or Radio button [No, Yes ]
   *Note: Will affect the MPG figures, a person can have a flex fuel vehicle but use traditional fuel.*
   *This notice displayed to educate and aid user in choice ** Check out this map to find out if E85 stations are in your area: http://www.afdc.energy.gov/afdc/ethanol/ethanol_locations.html*

**Note:** Do not let the user continue without answering all of the above questions. Clicking the continue button will display the review screen.

**Graphics or Flash ideas welcome here!**

*When the Vehicle Advisor option is selected the user will be prompted to answer the series of questions displayed above. These questions will be used in the programming to select vehicles that meet the criteria based on the user input. The recommendations will come from the AVAILABLE_VEHICLE_DATA table.*
Questions will identify, by GSA standard item number, which vehicles will display in the comparison. See matrix table provided by client for detail (GSA_Matrix.docx – Note client to update/validate this matrix for 2010).

Upon answering all above questions the user should see a quick summary/review and be given the choice to [GO BACK] to modify answers or to click or a [Recommend and Compare] button. The screen below should display their answers and give them the appropriate means, i.e. pulldown, text entry, etc to make changes.

In addition to reviewing the user inputs, it is at this point the averages for Life Years and Residual Values would also display and could be changed. They will be based on GSA item numbers, so only those appropriate item numbers based on the above input will be open for change. (Note the client is to provide these averages by GSA item number, they are to be either manually entered or mass loaded into the AVAILABLE_VEHICLE_DATA table – do not have info yet.)

If it is easier, these may be shown by Make/Model also, but again, only those types of vehicles that reflect the user input will be displayed and open to change. If the user changes, these new values will need to be stored and used in the calculations for the cost of ownership in the final table/report and detailed table/report screens.

See example, next page...note table values are example only.
Option 2: Recommend and Compare

Please review your inputs and make changes if desired, when satisfied, click the Recommend and Compare button below.

1. **Use**: Pool vehicle (pull-down button for changing...on all answers an table below)
2. **Road types driven on**: Paved roads
3. **Do you need pick-up bed space?** No
4. **Do you need towing capabilities?** No
5. **What is your GVWR requirement?** Not applicable
6. **Anticipated miles driven per year**: 12,000
7. **Do you live in an area where you are required to have a flex fuel vehicle?** No
8. **Will you be using E85 or biodiesel in your vehicle?** Yes

Please review the National averages for years of vehicle life and % residual value below. It is understood that these figures vary across Regions. You may change these figures to more accurately reflect your Regional values or you may accept the National average. These values are used by the Tool to calculate Cost of Ownership.

<table>
<thead>
<tr>
<th>GSA item number</th>
<th>General Vehicle Description</th>
<th>Average Years of Vehicle Life</th>
<th>% Residual Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8c</td>
<td>Subcompact Car</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>9c</td>
<td>Compact Car</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>9H</td>
<td>Compact-Hybrid Car</td>
<td>8</td>
<td>25%</td>
</tr>
<tr>
<td>10x</td>
<td>Mid-sized Car</td>
<td>6</td>
<td>15%</td>
</tr>
</tbody>
</table>

Clicking the [Recommend and Compare] button will return a listing in table graphics format much like the one for the Compare option. The Make/Model field for the comparison vehicles will be hyperlinked and when clicked on would bring up a screen with detailed information about that vehicle including a picture. All output screen reports should have the ability to be saved and/or printed.
Detailed information will be populated from the AVAILABLE_VEHICLES table, and from user input. It will include a repeat of the information contained on the initial table as well as: Use, Road types appropriate for vehicle, FuelType, DrivelineSystem, Hybrid, FlexFuel compatibility, NumberOfDoors, TowingCapacity, PickupBoxLength, RearAxle (only appropriate on heavy trucks), Estimated annual mileage, Life Expectancy, Plans to use Flex fuel and a picture. (Where an item is unavailable or inapplicable, that will be noted). See page 12 of this document for an example of what the detailed info might look like.

Recommend Screen 4 - Report

Option 2: Recommend and Compare

<table>
<thead>
<tr>
<th>Listing of Available Vehicle options</th>
<th>[Insert “- Current Year” here]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make/Model</td>
<td>Estimated MPG</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*see FleetToolCalcs document for specifics on inputs to calculate the above values

In addition to the table comparison above, the client would like to have a graph of each calculated field (MPG, Cost, Emissions). When viewing the examples, we found the graph did not display much of use and what difficult to see a comparison. Next page are some examples, please include in the report, if they can be made to actually compare. GHG was the best example.
**Make/Model:** GM Malibu  
**Estimated MPG:** 25  
**Annual cost of ownership:** $2345.  
**GHG emissions:** 4.23 Metric Tons/year  
**Warranty Info:**  
- **Powertrain:** 5 yr/100,000 miles  
- **Corrosion:** 6 yr/100,000 miles  

**Use:** Pool vehicle  
**Road Types appropriate for this vehicle:** Paved roads  
**Type of fuel:** Gasoline  
**Driveline system:** 2x4  
**Hybrid:** No  
**Compatibility with Flex Fuel (biodiesel, E85, etc):** Yes, E85  
**Number of doors:** 4  
**Towing Capacity (GVWR):** No – Not applicable  
**Pickup box length:** Not applicable  

**Plans to use Flex Fuel:** Yes  
**Life Expectancy of Vehicle:** 6 years  
**Estimated Annual Mileage:** 12,000 miles  
**Rear Axle:** Not applicable
**Note:** This design specs document should be used in conjunction with the following documents and information to develop the tool:

<table>
<thead>
<tr>
<th>Document or Related Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mantis Tickets 5020 &amp; 5124</td>
<td>Documentation of process, progress, correspondence with client, schema, tables, etc</td>
</tr>
<tr>
<td>Fleettableplan.docx</td>
<td>Planned table design – Tracy/Ruth</td>
</tr>
<tr>
<td>FleetToolCalcs.docx</td>
<td>Specific inputs, calculation and information needed to populate the values in the Comparison Tables. For specific Green House Gas calculations see GHG_Calcs.docx - Ruth</td>
</tr>
<tr>
<td>GHG_Calcs.docx</td>
<td>Client provided specific formulas to use for GHG calculations. NO$_2$ + CH$_4$ being reworked by client.</td>
</tr>
<tr>
<td>GSA_Matrix.docx</td>
<td>Client provided matrix that ties the questions for the Vehicle Advisor-Option 2 to the GSA item number. Client is reviewing GSA numbers available in 2010 and completing the table to include the towing GVWR where applicable.</td>
</tr>
</tbody>
</table>
Open URL to launch Fleet Tool

User chooses option

Option 1
Compare Only

Exit Tool

User prompted for input

Go Back

Continue

Screen refreshes displaying user input – if OK, user continues, if not and changes are desired, user clicks “Go Back”

Continue

Go Back

User prompted for vehicle to compare- user selects and selection is displayed

Change selection

Compare

Compare Table displays

Click Hyperlink on Compare Table

Detail screen displays

Go Back

Print

Save

Main Menu

Compare another vehicle

Print

Save

Exit

Creates printable doc, prompts for printer

Creates doc, prompts name and directory
Option 2
Recommend and Compare

Go Back to Main Menu

Continue

Page 1 - Tool Main Menu

User prompted to answer a series of questions

Exit
Continue

Closes Browser?

Answers to previous questions display as well as life years and residual value percentages. User is allowed to adjust answers and life years/rs%.

Recommend and Compare

Compare Table displays

Click Hyperlink on Compare Table

Detail screen displays

Go Back
Print
Save
Main Menu
Go Back

Print
Save
Exit

Creates printable doc, prompts for printer
Creates doc, prompts name and directory

Closes Browser?