

NILS General Requirements

What is the purpose of the NILS General Requirements?

- Facilitates use of the NILS software by guiding users through predefined business processes (Workflow)
- Limits users to a specific set of tasks in a process
- Provides a means for documenting and tracking users' progress and monitors the status of a job
- Provide for system overall security (Security)
- Support for history and lineage of parcels (History)
- Provide for an area of interest in which to work in (AOI)

NILS General Requirements

Workflow

- Provide tools to define processes (Jobs)
- Assign group level access to tasks
- Provide event notification (email)
- Assign tasks to individual users
- Monitor progress
- Initiate, transfer, and cancel jobs

NILS General Requirements - Workflow

Definitions

- A **Job** is defined to model a particular business process, e.g. a township survey
- A Job consists of multiple **tasks** that describe discrete units of work, e.g. highlight township area and conduct survey research
- A task may launch ArcGIS with the relevant setup parameters loaded
- A task may be a **placeholder** for a non-GIS task, e.g. photocopy articles of incorporation

NILS General Requirements - Workflow

- The workflow framework will allow administrators to design, create, administer, and manage NILS workflows at a desired granularity from inception to completion
- The workflow framework will consist of three major applications:
 - The **Task Assistant** for all feature-related editing tasks to be carried out in ArcMap/Survey Analyst
 - The **Workflow Editor** for creating a finite number of workflow processes and supporting forms for data entry and presentation
 - The **Workflow Manager** for initiating Jobs, assigning task responsibilities, monitoring task and user status, adding notes to tasks, marking tasks complete, etc.
- Workflows will be defined in XML documents and interpreted within the custom framework

NILS General Requirements - Workflow

- After a user initiates a Job, they complete and “check-off” tasks sequentially
- Some tasks may be required
- Some tasks may be optional
- Upon completion, some tasks may pass the next task on to another user (with or without notification)

NILS General Requirements – Workflow

- Staff only work on their tasks then reassign to the appropriate users when done
- All steps are logged
- Steps can be:
 - GIS steps in ArcInfo
 - Manual or offline steps ('placeholder' steps)
 - Non-GIS NILS steps, like data entry
- Status can be monitored throughout the workflow and staff members reassigned

NILS General Requirements - Workflow

Task Assistant: Edit Workflow Tool

- Custom ArcMap editing workflows are built using the Workflow Editor for the Task Assistant, which facilitates:
 - Ordering and nesting of steps
 - Setting edit tasks and features
 - Association of custom editing tools
 - Setting the selectable layers for the edit task
 - Setting the snapping environment for the edit task
- Once it's saved, the edit workflow can be used directly in ArcMap in the Task Assistant
- Edit workflows can be thought of as sub tasks of a step in the overall process workflow

NILS General Requirements - Workflow

Non-NILS Workflow Steps

- Not all workflow steps will be completed directly in NILS ArcGIS
- These steps might include:
 - Offline steps
 - Manual steps
 - Approval steps:
 - Signature steps
 - Review steps
 - Steps completed in 3rd-party applications
- In the overall workflow, these steps will be supported by 'placeholder' steps

NILS General Requirements - Workflow

Non-NILS Workflow Steps

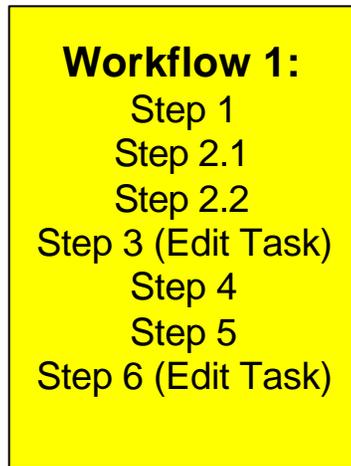
- Initially (version 1):
 - 3rd party placeholder steps must be initiated by the user
 - Users will manually mark step complete ('check-off')
- Later, if required, Workflow Editor API could support:
 - Programmatic 'check-off' of placeholder steps from 3rd-party apps
 - Limited integration with 3rd-party applications such as:
 - Starting 3rd-party apps from NILS Workflow
 - Load data or open files/templates in 3rd-party apps

NILS General Requirements - Workflow Notification

- Automatic email notifications can be sent when:
 - A Job is initiated
 - A task is assigned
 - A step is completed
 - A Job is closed
 - An abnormal event occurs
 - Other events
- Notifications can be sent to User Groups or individuals

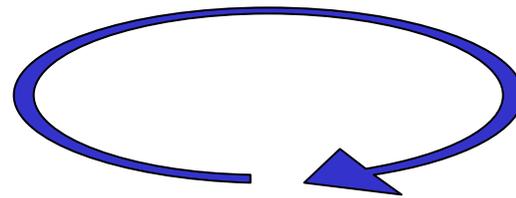
NILS General Requirements - Workflow

Job initiated

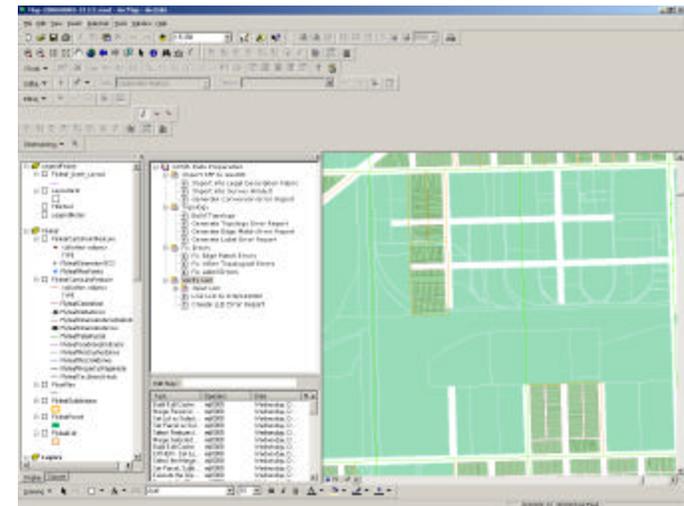
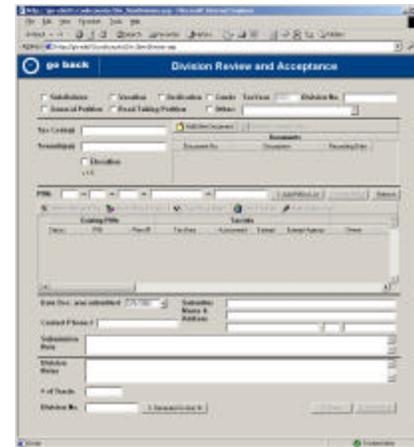


Job closed

•Users step through Workflows iteratively



•Interaction is with relevant custom forms or applications at each step



NILS General Requirements – Workflow Editor

- ESRI will develop an initial set of workflows and supporting forms. BLM/FS staff will be responsible for the development of the remainder of the workflows using developed administration tools
- The general process for workflow creation will be:
 - Define tasks in the process
 - For ArcGIS tasks:
 - Create and associate template (ArcMap .mxt) with the task for interface setup
 - Create and associate Task Assistant flows (.xml) to the task
 - Add any placeholder steps
 - Assign permissions to each step of the workflow
 - The workflow process is made available for use
- If integration with outside systems is required:
 - Developer codes all customized forms
 - Forms are integrated with the workflow steps

NILS General Requirements – Workflow

- Workflow paradigm is to define a single workflow for a business process
- Deviations from standard, defined workflows are logged by the user if necessary but the standard workflow is not altered

If it is necessary to add tasks that are not already in the flow to complete the Job, the user can log this information at the task where the flow deviates, but tasks are not added to the workflow. The new tasks may “spin-off” other defined, discrete workflows, e.g. a second ‘Conduct Survey’ Job could be initiated after Task 5.

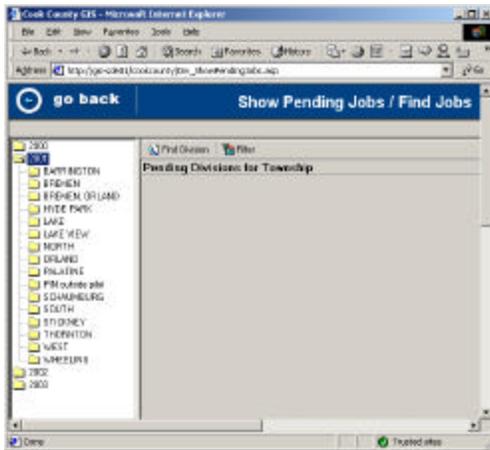
Workflow 1:
Task 1
Task 2
 2.1
 2.1.1
 2.1.2
 2.2
Task 3-Edit boundary
 3.1 Select Feature
 3.2 Edit Geometry
 3.3 Save Edit
Task 4
Task 5-Conduct Survey
 5.1 Contact Owner
 5.2 Download Current Map
 5.3 Record data
 5.4 Import data
Task 6

Tasks in workflows may contain multiple levels of sub-tasks, they may be GIS tasks carried out in ArcGIS (Task 3), or they may be nested, discrete, defined workflows in their own right. In this example, the ‘Conduct Survey’ task (Task 5) is a separate defined workflow in its own right.

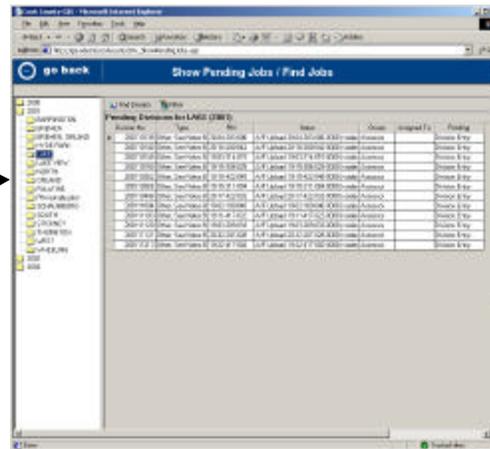
Conduct Survey Workflow:
Task 1 Contact Owner
Task 2 Download Current Map
Task 3 Record data
Task 4 Import data

NILS General Requirements Workflow

Workflow Status Tracking

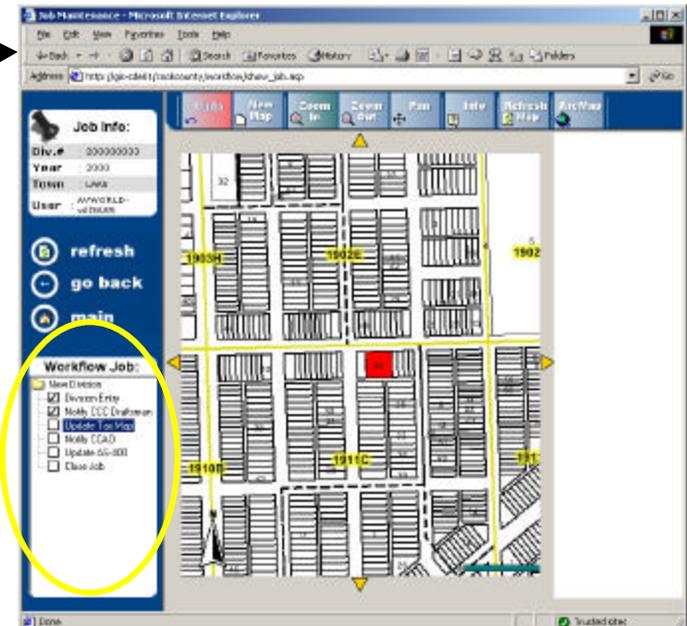


1. User searches jobs by date and region



2. User selects the job of interest

3. The user is presented with the job, including its status.



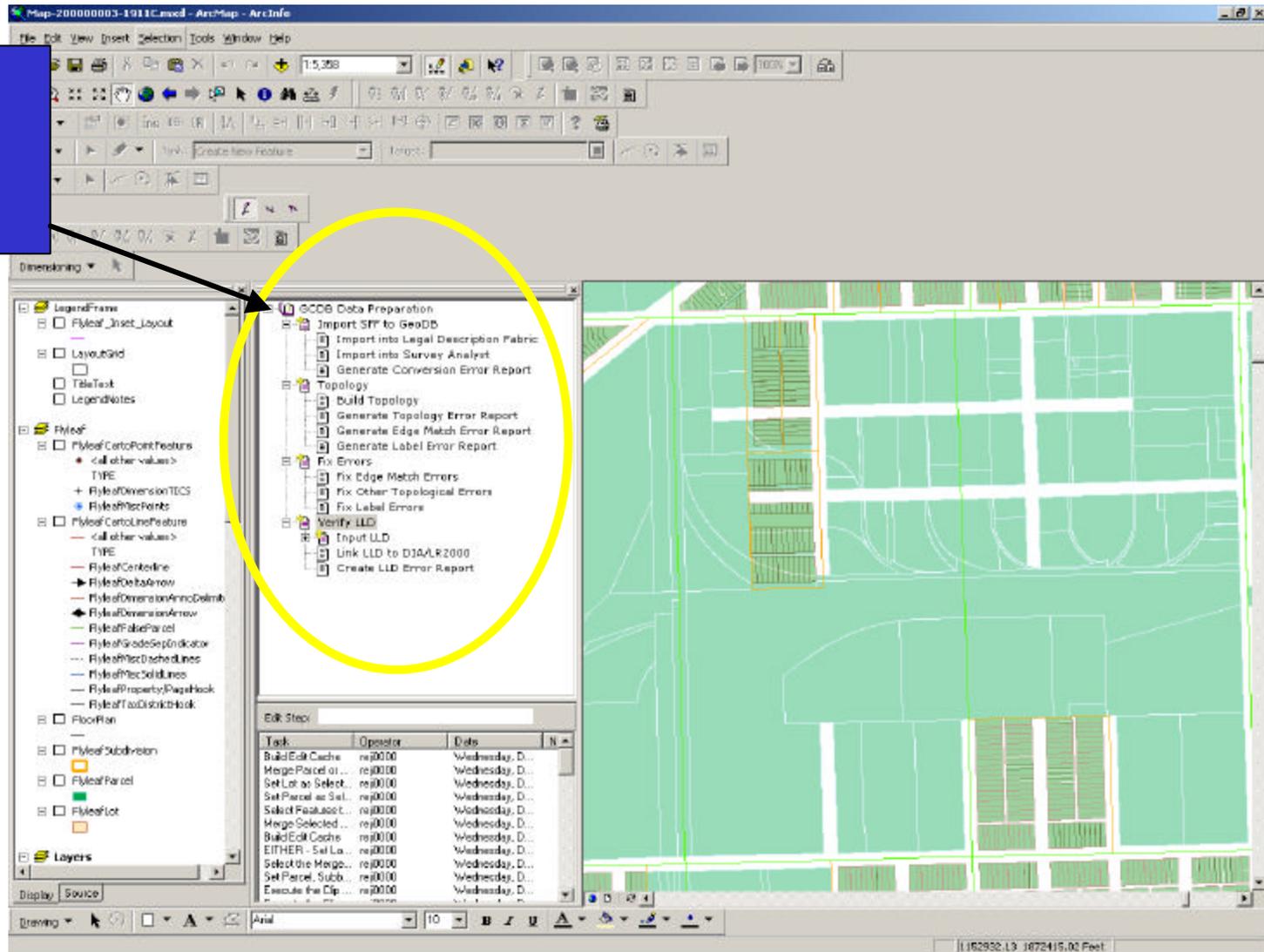
Status is indicated by check boxes here

NILS General Requirements - Workflow Editor Assistant

Sample Editor Assistant Workflow for the GCDB Data Preparation step

4. User enters a GIS task.

ArcMap is started. All relevant layers and required tools are loaded as defined by the template and Editor Assistant flow associated with the task.

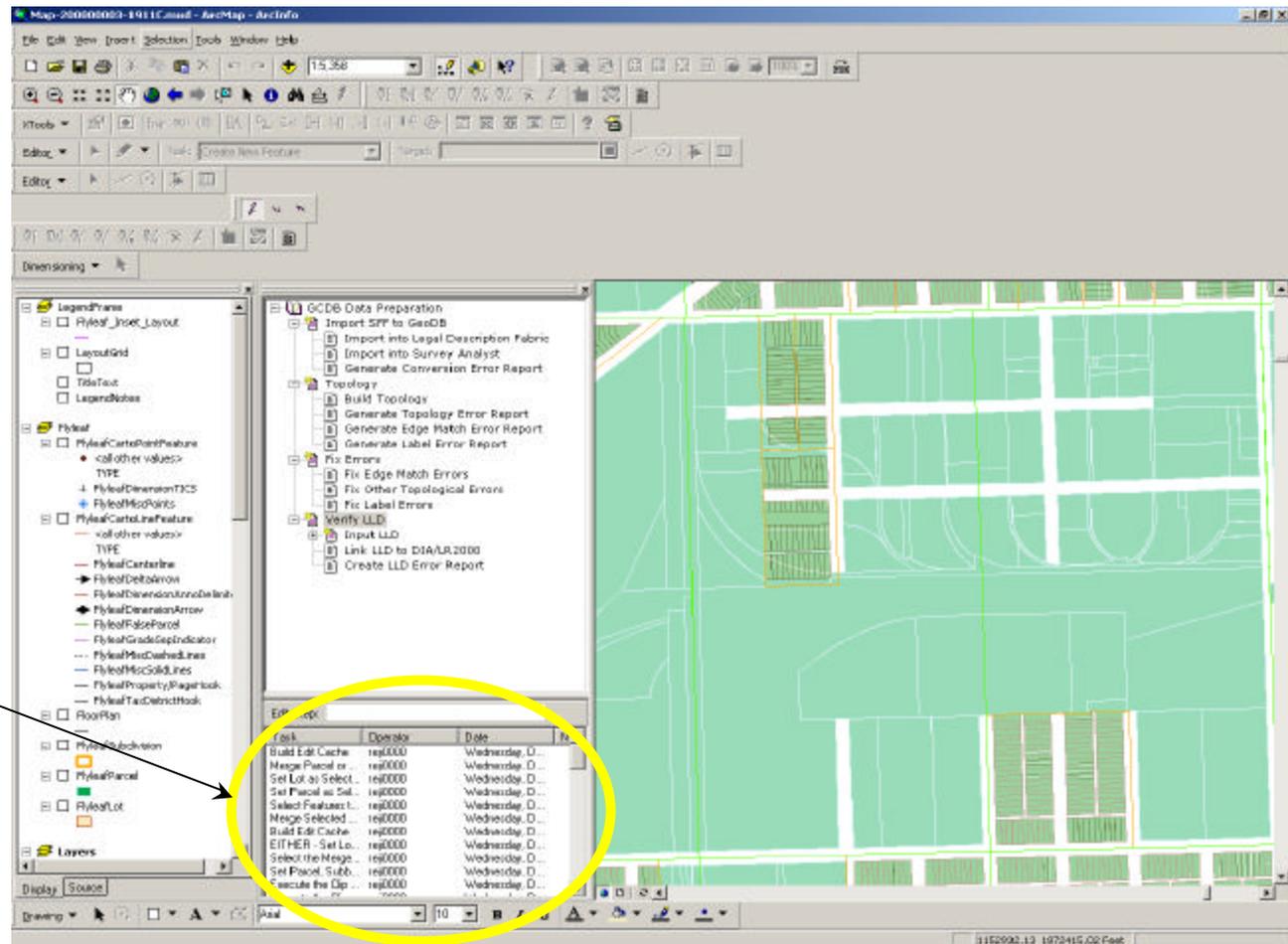


NILS General Requirements - Workflow

Edit Task Tracking

- If a job is at a step in a workflow process that is carried out in ArcMap, a log of each step in the Editor Assistant task list is displayed.

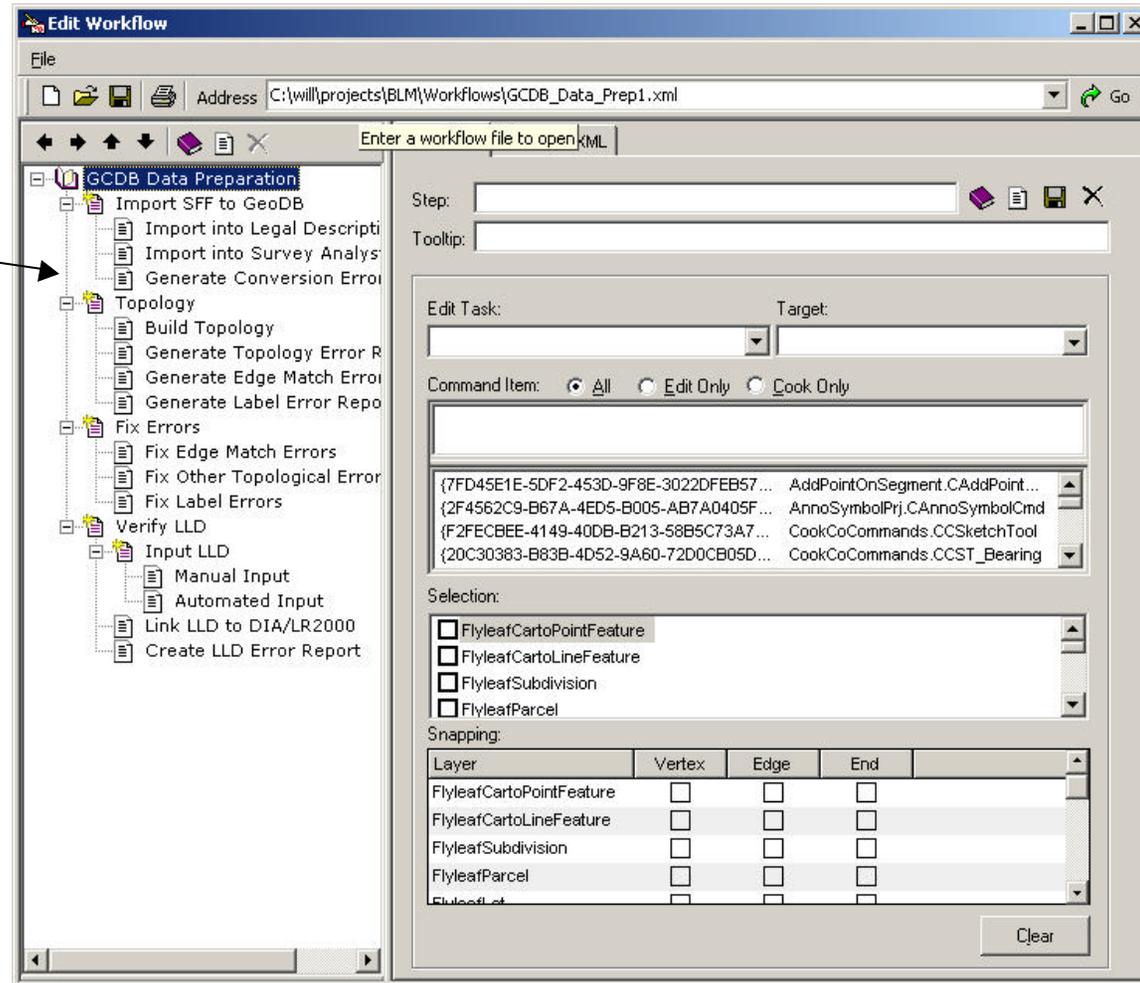
A running log of the completed edit task steps is displayed in the Editor Assistant



NILS General Requirements - Workflow

Editor Assistant: Edit Workflow Tool

Order and nest edit steps



Step:

Tooltip:

Edit Task: Target:

Command Item: All Edit Only Cook Only

{7FD45E1E-5DF2-453D-9F8E-3022DFEB57... AddPointOnSegment.CAddPoint...

{2F4562C9-B67A-4ED5-B005-AB7A0405F... AnnoSymbolPrj.CAnnoSymbolCmd

{F2FECBEE-4149-40DB-B213-58B5C73A7... CookCoCommands.CCSketchTool

{20C30383-B83B-4D52-9A60-72D0CB05D... CookCoCommands.CCST_Bearing

Selection:

FlyleafCartoPointFeature

FlyleafCartoLineFeature

FlyleafSubdivision

FlyleafParcel

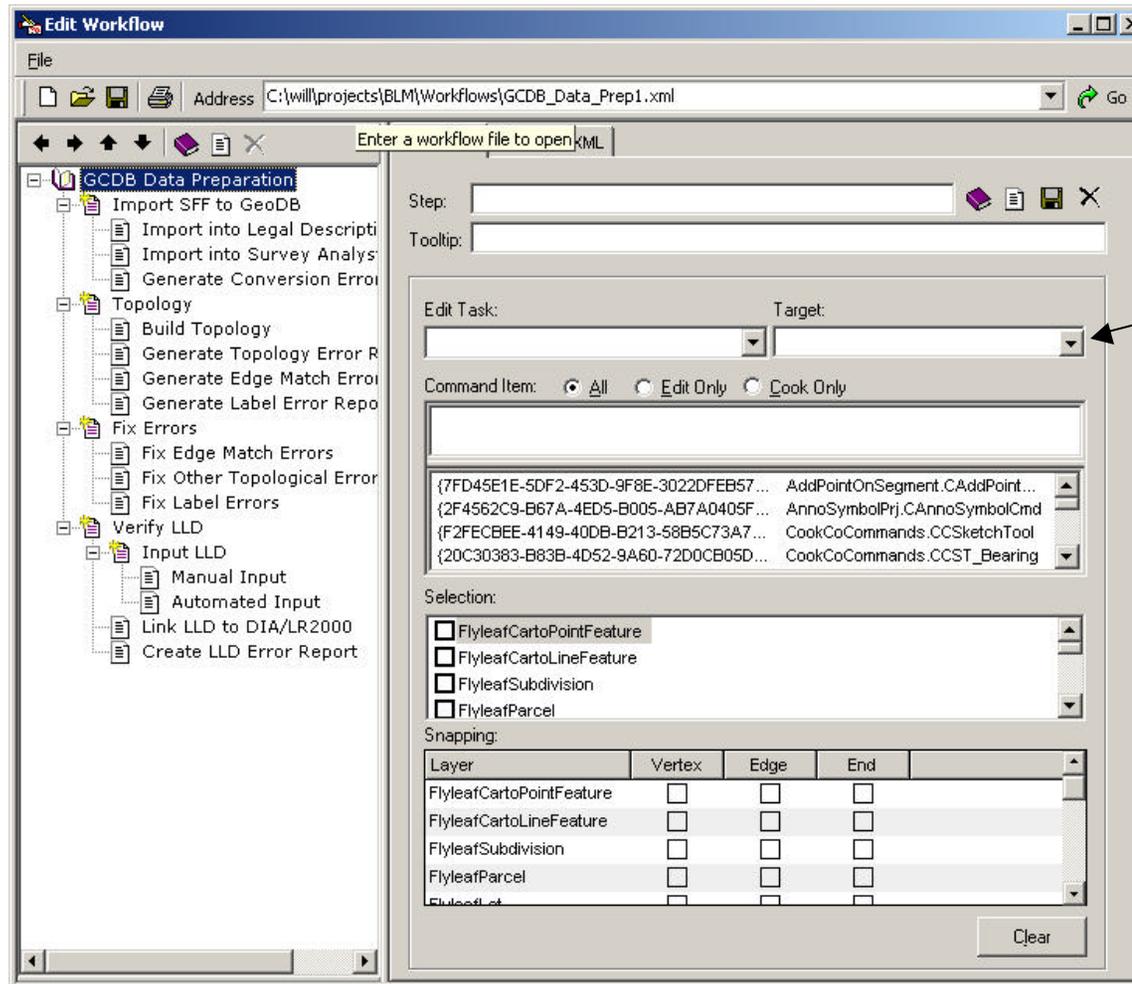
Snapping:

Layer	Vertex	Edge	End
FlyleafCartoPointFeature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FlyleafCartoLineFeature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FlyleafSubdivision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FlyleafParcel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flyleaf...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Clear

NILS General Requirements - Workflow

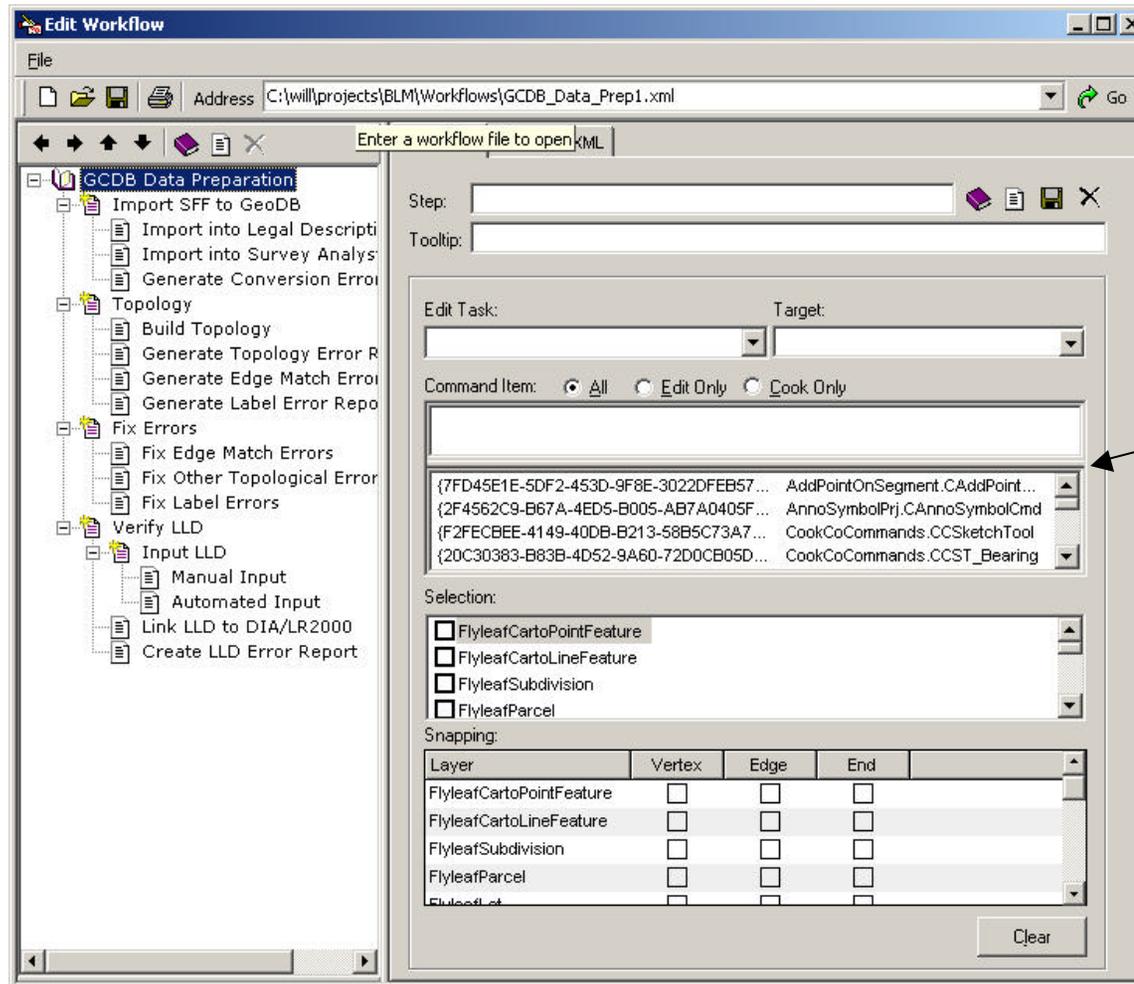
Editor Assistant: Edit Workflow Tool



Set edit tasks and features

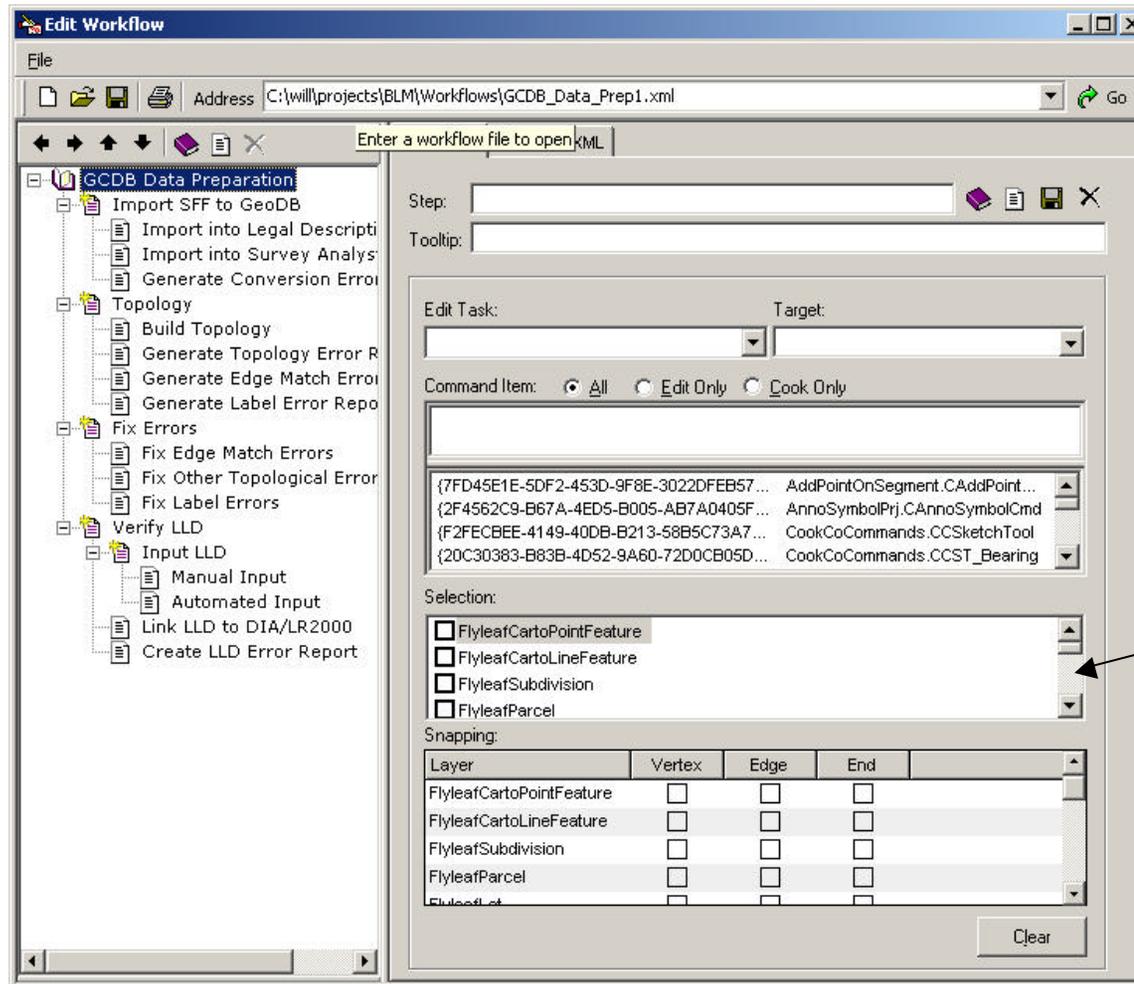
NILS General Requirements - Workflow

Editor Assistant: Edit Workflow Tool



Associate
custom
editing tools

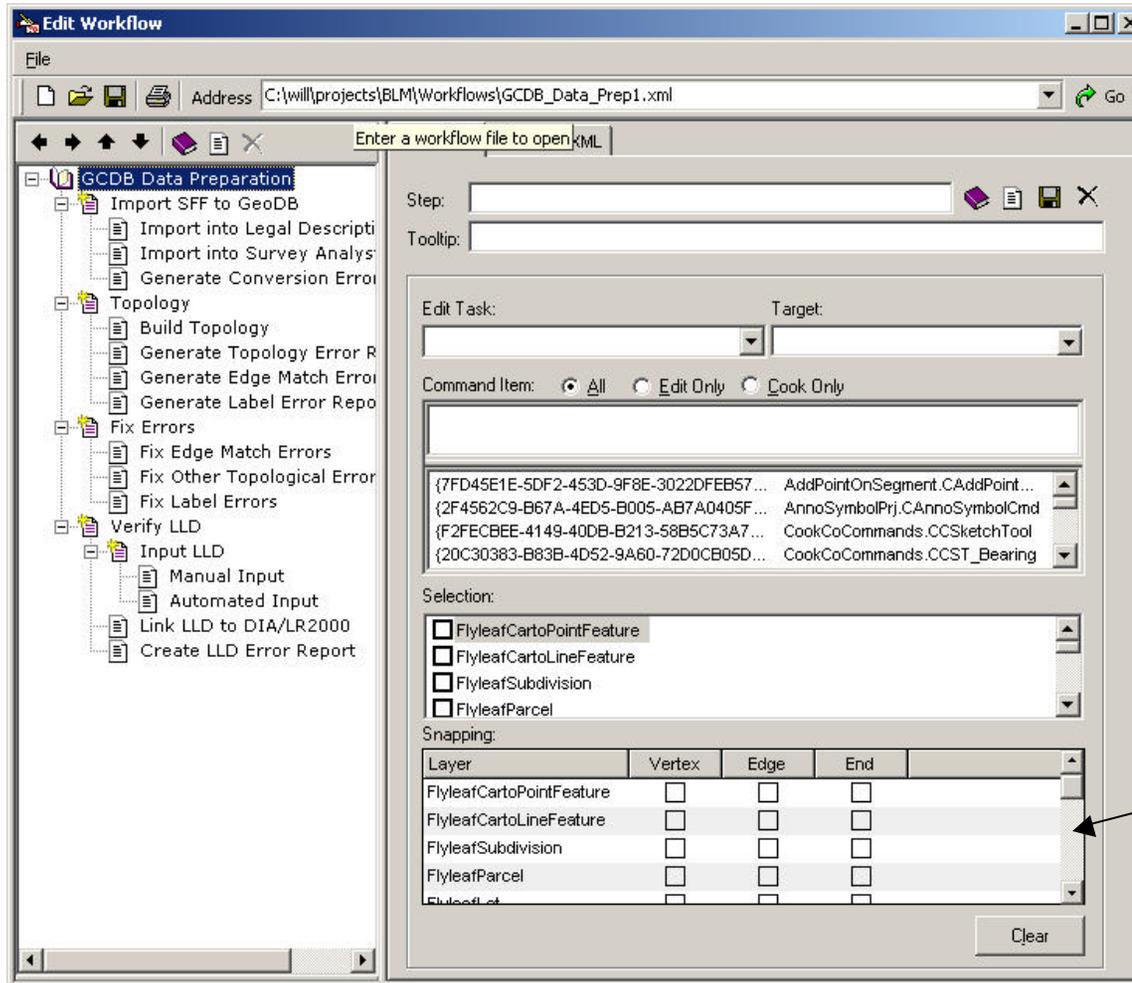
NILS General Requirements - Workflow Editor Assistant: Edit Workflow Tool



Set the selectable layers for the edit task

NILS General Requirements - Workflow

Editor Assistant: Edit Workflow Tool



Set the snapping environment for the edit task

NILS General Requirements - Workflow

Workflow Editor

- The Task Assistant will be used for defining workflows and tasks within ArcGIS. The Workflow Editor will be used for editing the entire workflow processes
- The Workflow Editor will allow administration of overall process workflows, not just GIS edit task steps
- Workflow Editor will facilitate:
 - Adding 'placeholder' steps to existing workflows
 - Security administration for each steps
 - Administration of email notifications
 - Tracking of overall workflow steps

NILS General Requirements - Workflow Issues

- ESRI will develop an initial set (2-3) of NILS workflows. Additional workflows will be developed by internal BLM/FS staff
- The set of initial workflows for development, testing, and Version 1 delivery need to be elaborated
- A list of desired notification events is required
- The edit log tracks tasks as they are executed, but does not track what was edited. Is this required?

NILS General Requirements - Workflow

Release 1 Functionality

- The Workflow Editor will only automate GIS-related activities.
- All tasks in the workflow process will be logged and tracked, but tasks relating to off-line, manual, or non-GIS tasks will be tracked with task placeholders.
 - Placeholder steps will be completed outside of NILS
 - Placeholder steps will be manually 'checked-off'
 - Users won't be able to add customize general workflows with placeholder steps
- Workflows related to Data Preparation and Survey Analyst functionality will be developed for version 1.

The End.

