



Timber Transport Planning Tool

Neal Harwood
TRL Ltd



TimberTransportForum

delivering solutions for a growing UK harvest

Planning for the Future of Timber Transport

The issue

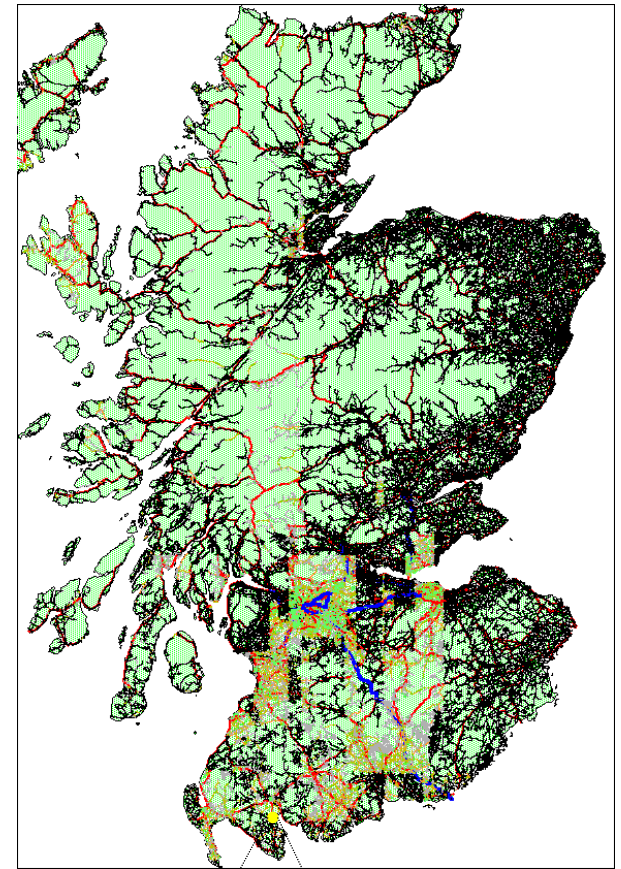
- Thousands of sites producing timber across Scotland
- This timber needs to be transported by lorry from these sites to processing/export destinations
- These lorries must use local roads to get from the sites to the trunk road network in order to reach their final destination
- The expected levels of timber traffic need to be known, and tools built, to enable planning for this traffic on local roads, in conjunction with local authorities



Planning for the Future of Timber Transport

The Road Network

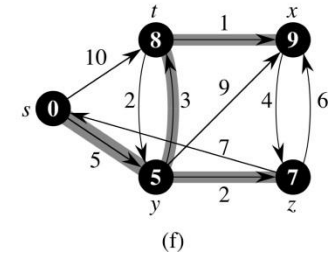
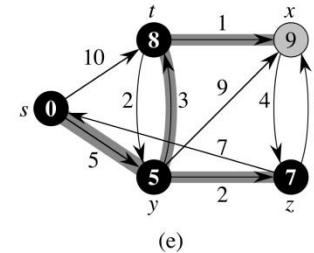
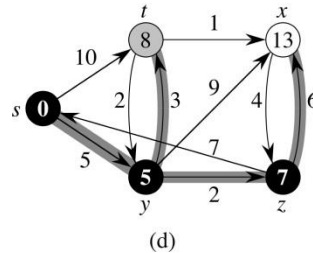
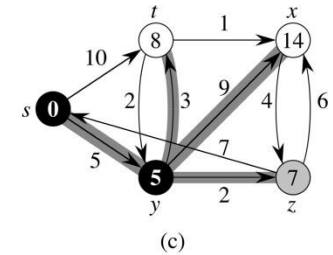
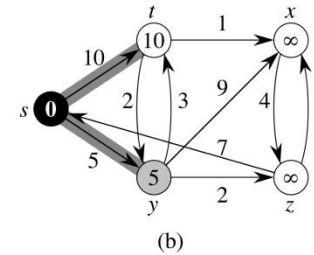
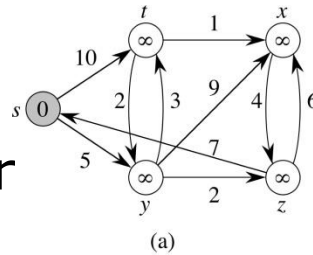
- Routing derived from Ordnance Survey ITN (Integrated Transport Network) layer.
- Details all roads in Scotland, classified by type:
(*Motorway, A-road, minor road, local road etc.*)
- The very fine detailed node/link structure of ITN means that feasible routes can be plotted through it.



Planning for the Future of Timber Transport

Determining traffic patterns

- Code calculates '**lowest cost**' route from each timber site to the Trunk Road network (or port or processing factory)



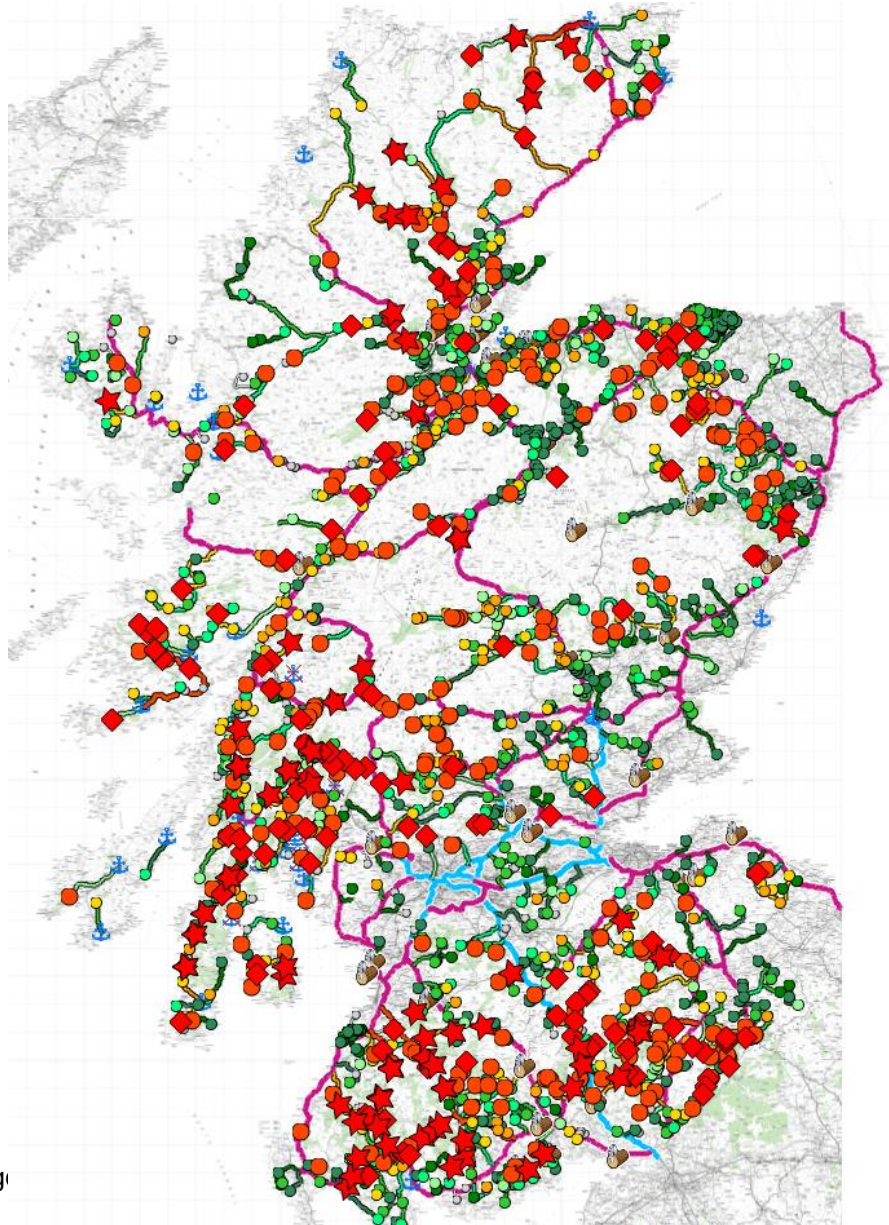
- '**Lowest cost**' value determined by scoring roads according to their suitability:

Type of road, low bridges and ARM status all contribute to this costing

- The result is a table defining the expected routes taken by traffic from each timber site
- Combining these routes with the forecast production levels give an expected timber traffic load on each road.

Planning for the Future of Timber Transport

Predicted Traffic Flows Mapped



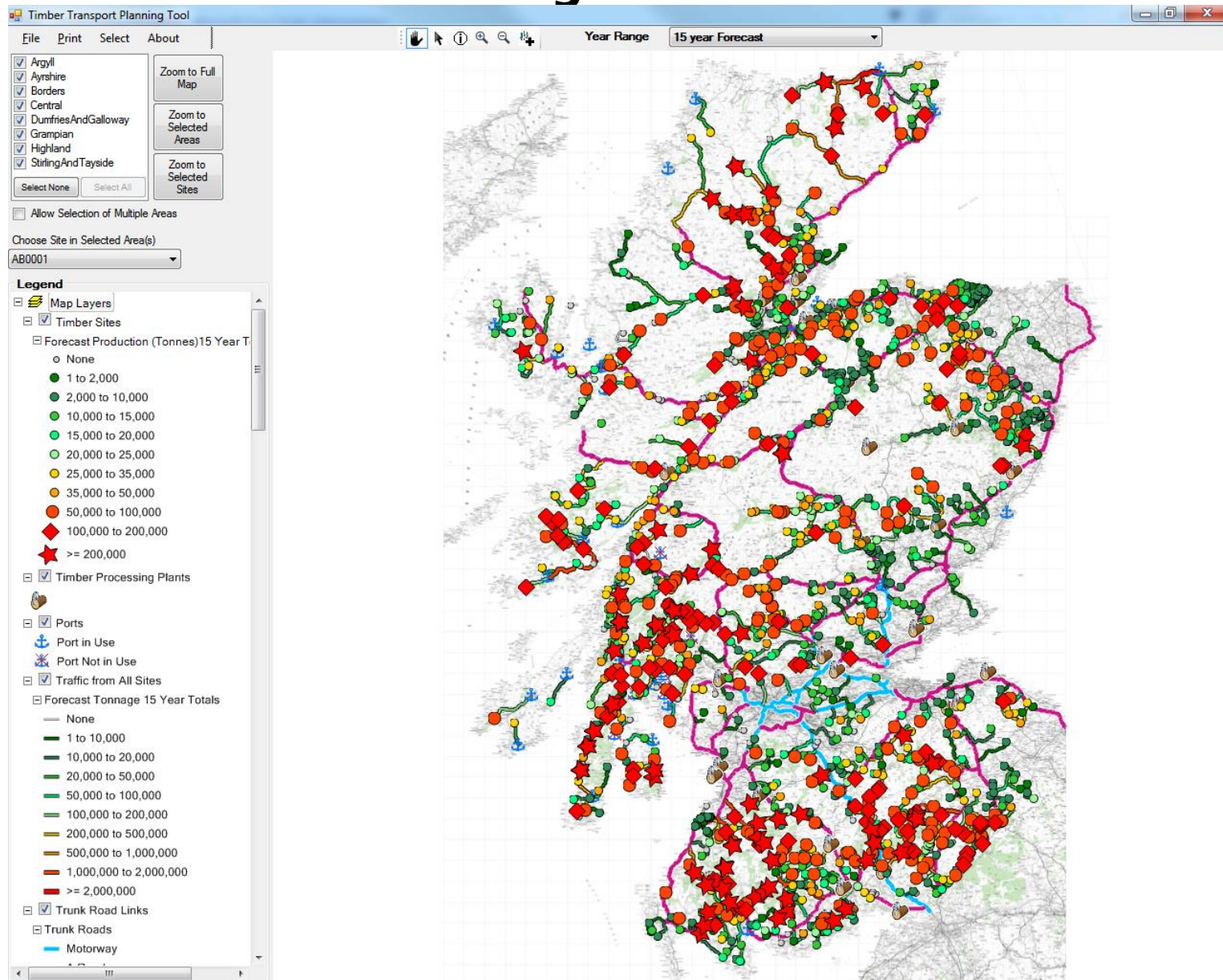
Forecast Production (Tonnes) 15 Year Totals

- None
- 1 to 2,000
- 2,000 to 10,000
- 10,000 to 15,000
- 15,000 to 20,000
- 20,000 to 25,000
- 25,000 to 35,000
- 35,000 to 50,000
- 50,000 to 100,000
- ◆ 100,000 to 200,000
- ★ ≥ 200,000

Forecast Tonnage 15 Year Totals

- None
- 1 to 10,000
- 10,000 to 20,000
- 20,000 to 50,000
- 50,000 to 100,000
- 100,000 to 200,000
- 200,000 to 500,000
- 500,000 to 1,000,000
- 1,000,000 to 2,000,000
- ≥ 2,000,000

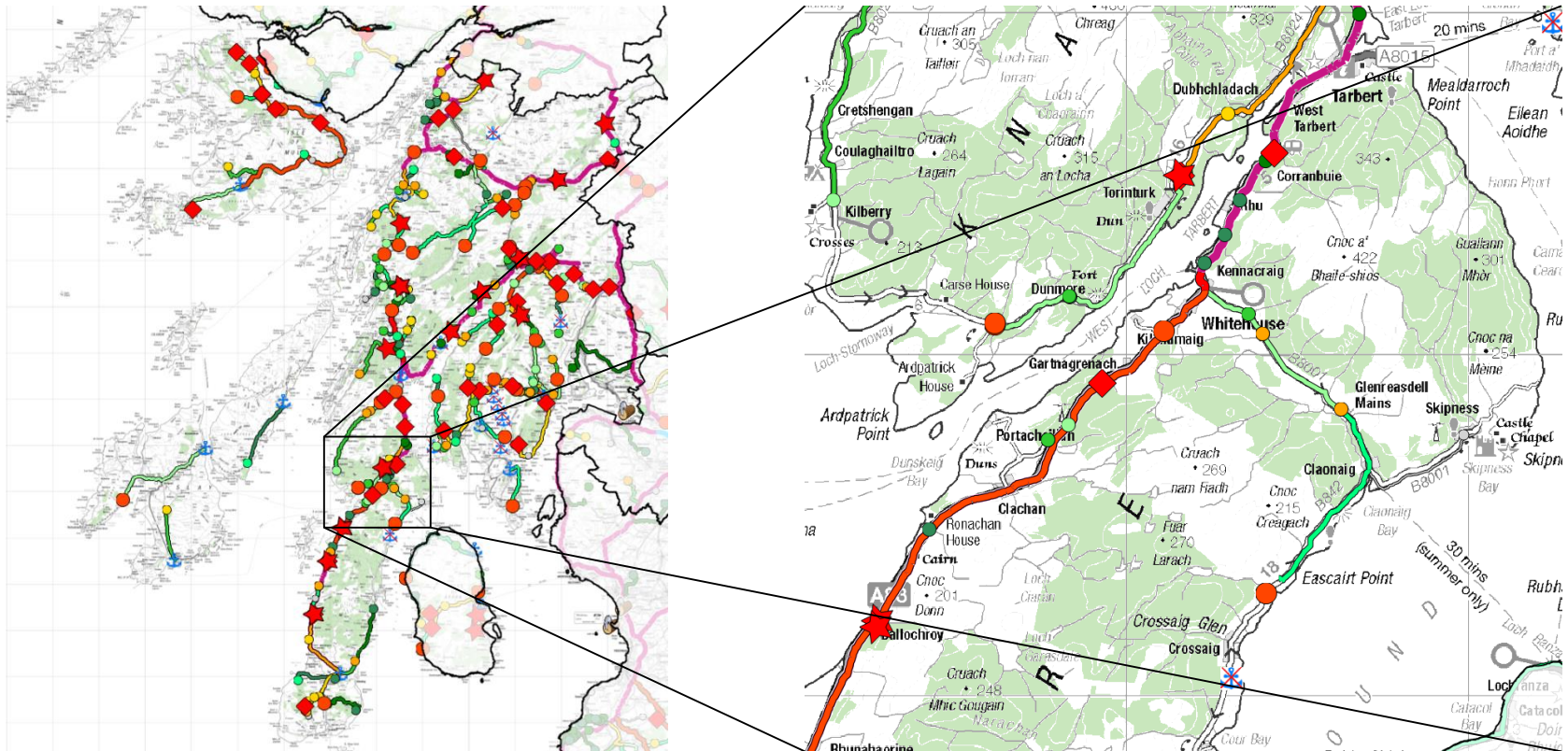
Planning for the Future of Timber Transport Planning Tool



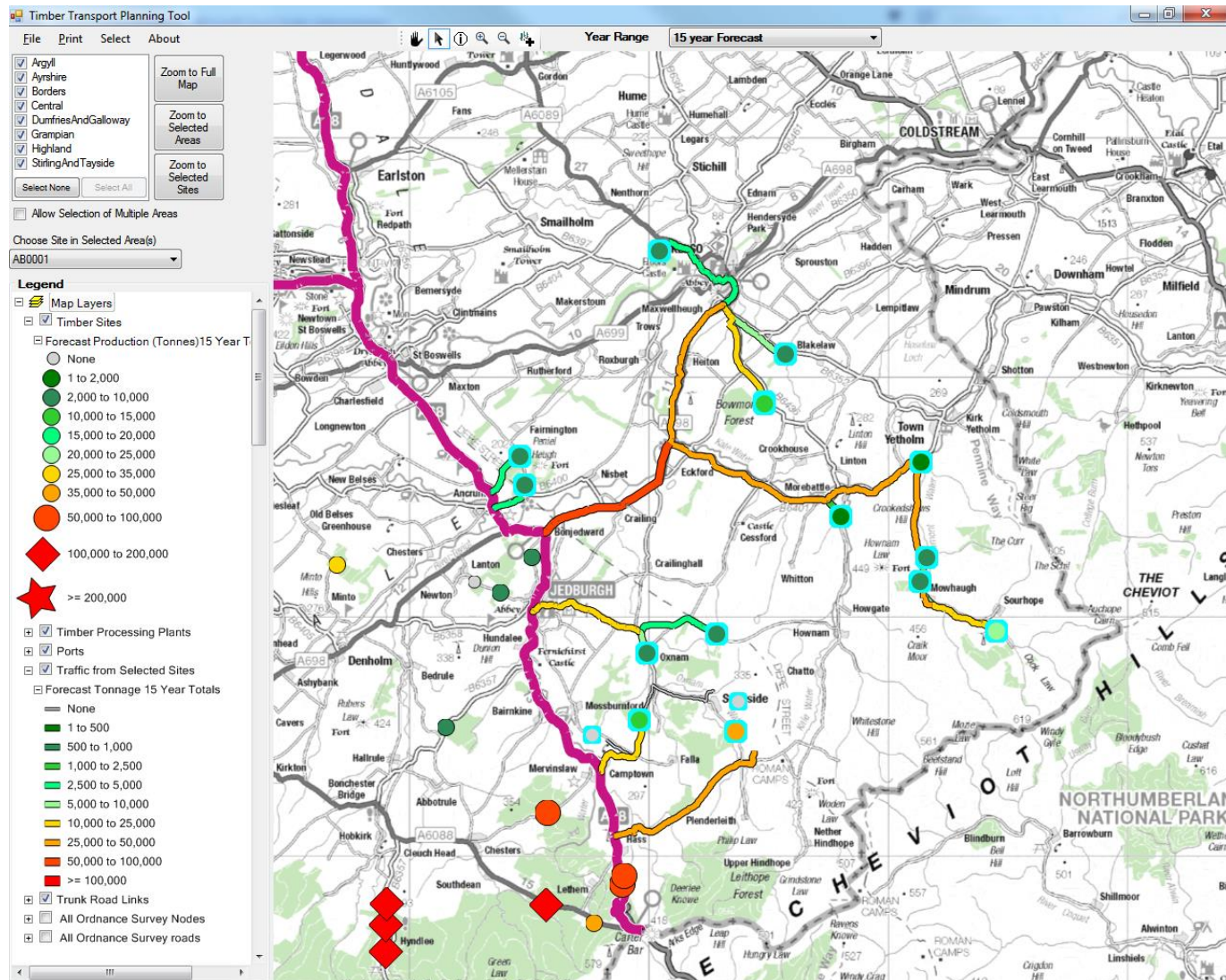
Planning for the Future of Timber Transport Zooming

The tool can zoom in to individual timber regions...

... right down to detailed views of local areas.



Planning for the Future of Timber Transport Sites in a area



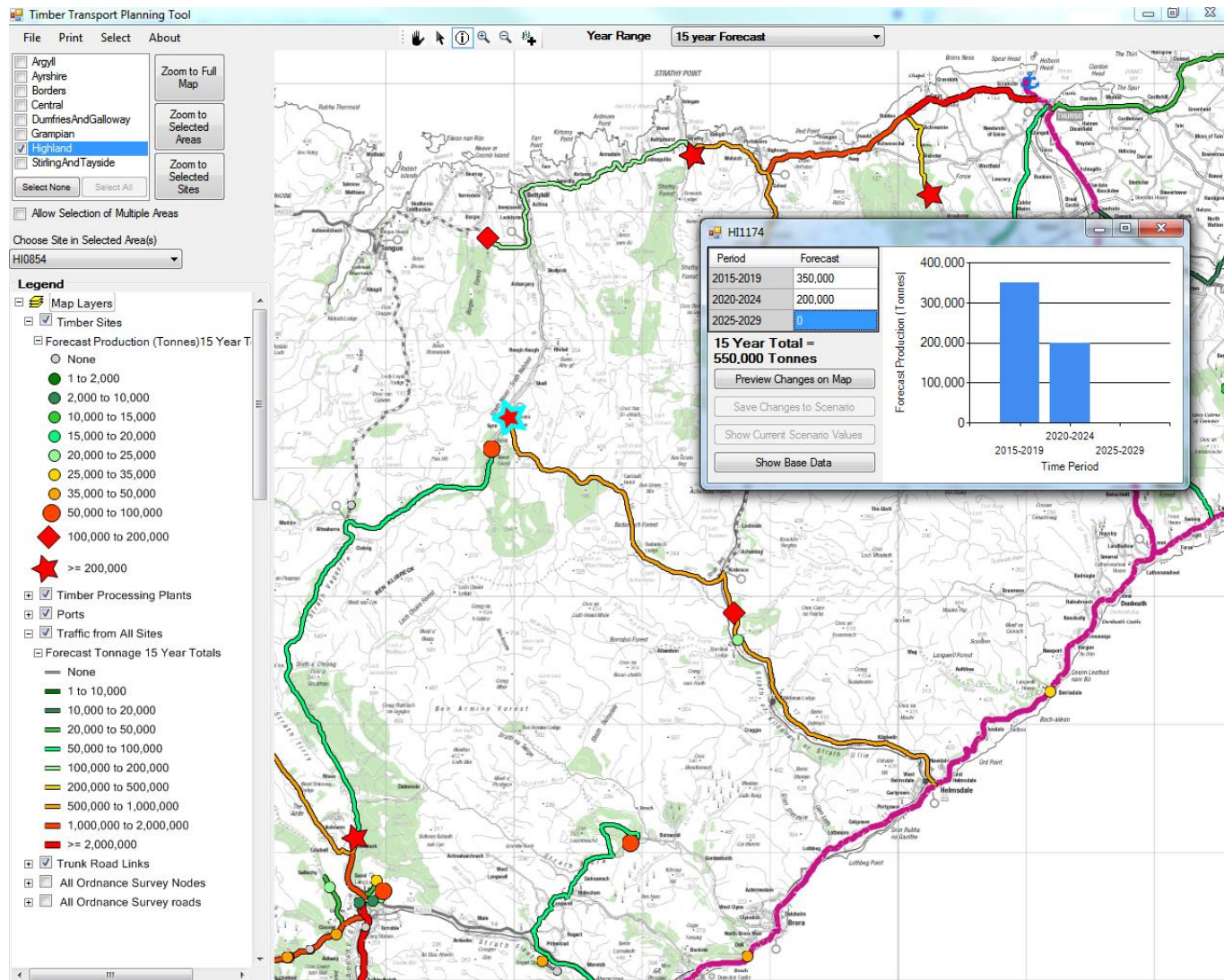
Planning for the Future of Timber Transport Scenarios

- Changes saved to “Scenario Files”
- Can try out different changes and their effects
- Once a change is confirmed, the scenario can be ‘committed’ to the database (locally)
- This becomes the ‘true’ data on the machine
- Scenarios files are text (xml) – they can be emailed easily

```
<?xml version="1.0" encoding="UTF-8"?>
<TimberTransportScenarioData>
  <Description>This text can be edited to become a description of this scenario</Description>
  <SaveDate>24/04/2015 10:31:08</SaveDate>
  - <AddedSites>
    - <Site>
      <SiteCode>AC2029</SiteCode>
      <_2015_Base>100</_2015_Base>
      <_2020_Base>0</_2020_Base>
      <_2025_Base>0</_2025_Base>
      <_15YrBase>100</_15YrBase>
      <Easting>238165</Easting>
      <Northing>765078</Northing>
      <GridRef>NN38166507</GridRef>
      <LocalAuthorityID>1</LocalAuthorityID>
      <TimberTrafficArea>Argyll</TimberTrafficArea>
      <Road/>
    </Site>
  </AddedSites>
  - <ForecastChanges>
    - <Site>
      <SiteCode>AB0175</SiteCode>
      <_2015_2019>0</_2015_2019>
      <_2020_2024>25000</_2020_2024>
      <_2025_2029>0</_2025_2029>
      <_15Years>25000</_15Years>
    </Site>
  </ForecastChanges>
  - <DeletedSites>
    - <Site>
      <SiteCode>HI1299</SiteCode>
    </Site>
  </DeletedSites>
</TimberTransportScenarioData>
```

Planning for the Future of Timber Transport

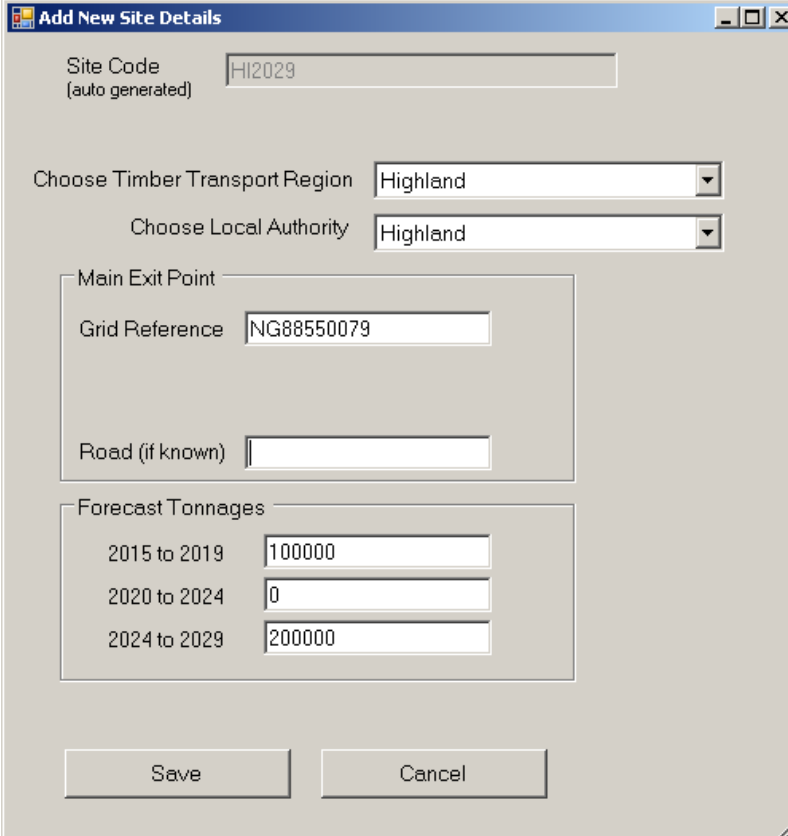
Adjusting Forecasts



Planning for the Future of Timber Transport

Adding and deleting sites

- Timber sites can be added to, or deleted from, the dataset.
- To add a site, click on a point on the map, and enter the required information
- The pathfinding process will have to be run to determine traffic routes from any new site



The screenshot shows a software dialog box titled "Add New Site Details". It contains several input fields and dropdown menus for entering site information. The "Site Code (auto generated)" field is populated with "HI2029". The "Choose Timber Transport Region" and "Choose Local Authority" dropdown menus are both set to "Highland". The "Main Exit Point" section includes a "Grid Reference" field with the value "NG88550079" and an empty "Road (if known)" field. The "Forecast Tonnages" section contains three rows of data: "2015 to 2019" with a value of "100000", "2020 to 2024" with a value of "0", and "2024 to 2029" with a value of "200000". At the bottom of the dialog are "Save" and "Cancel" buttons.

Field	Value
Site Code (auto generated)	HI2029
Choose Timber Transport Region	Highland
Choose Local Authority	Highland
Main Exit Point	
Grid Reference	NG88550079
Road (if known)	
Forecast Tonnages	
2015 to 2019	100000
2020 to 2024	0
2024 to 2029	200000

Planning for the Future of Timber Transport

Link Cost Editing

- Routes are determined by comparative link costs
- Costs based on:
 - Link Type
(A Road, B Road, Minor Road, etc.)
 - Link Nature
(single or dual carriageway)
 - Low Bridges
 - Agreed Routes Status
 - Manual adjustment
“but the traffic does not go that way!”
- These can be edited, but then the routes must be recalculated.

	Field Name	Value
▶	IDLINK	317958
	TOID	4000000004322995
	DESCTERM	Private Road - Restricted Access
	NATURE	Single Carriageway
	costType	12
	costNature	2
	costHeight	1
	costARM	1
	costManual	1

Total Cost Factor = 24