



Getting It All Together

Evidence from WA of an
Integrated Grains Industry

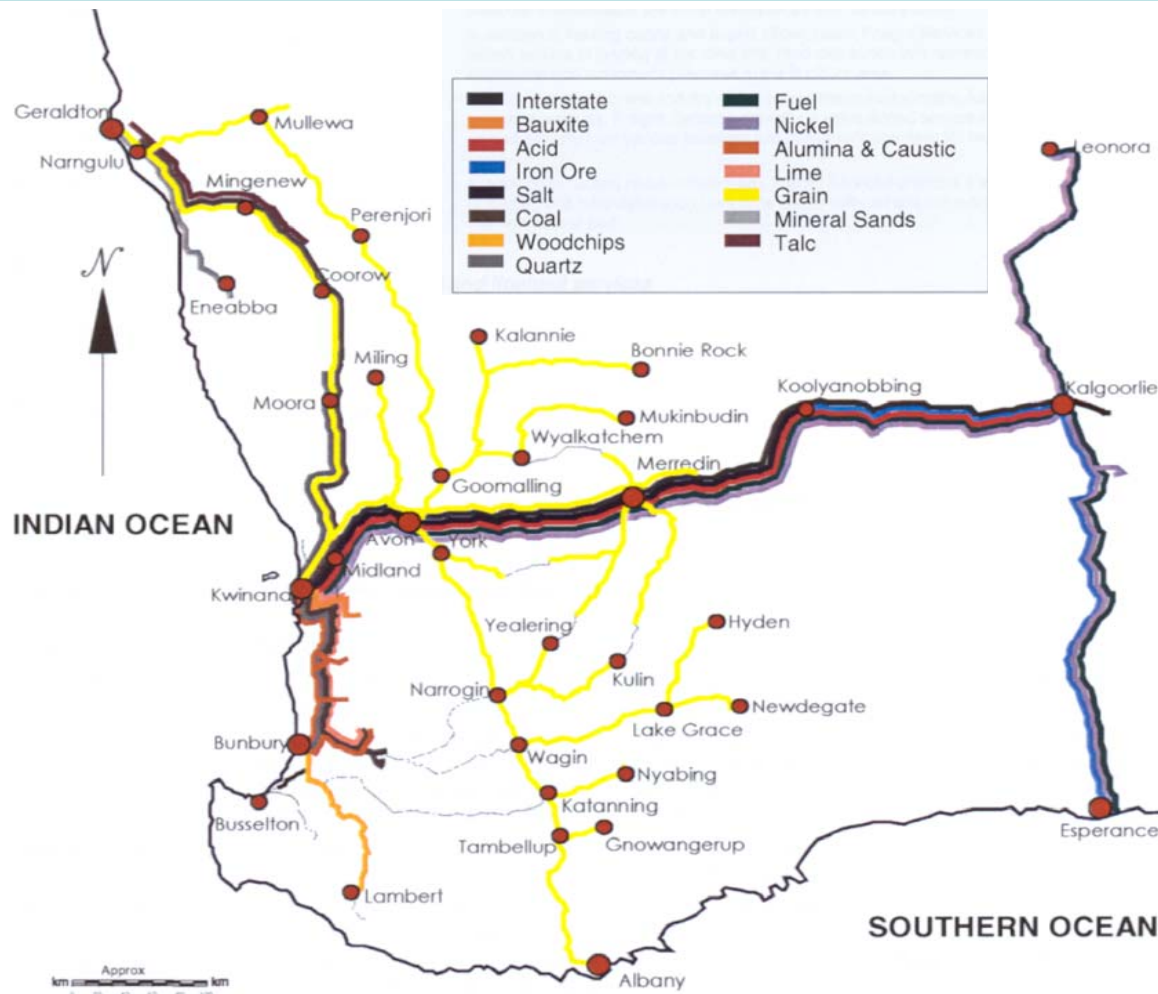
1 February 2007

Outline



- WA Grain Supply Chain Task
- Supply Chain Planning
- Supply Chain Characteristics
- History – Reviews and Changes
- Recent Review
 - Process
 - Possible Outcomes
- Concluding Observations

WA Grain Supply Chain Task



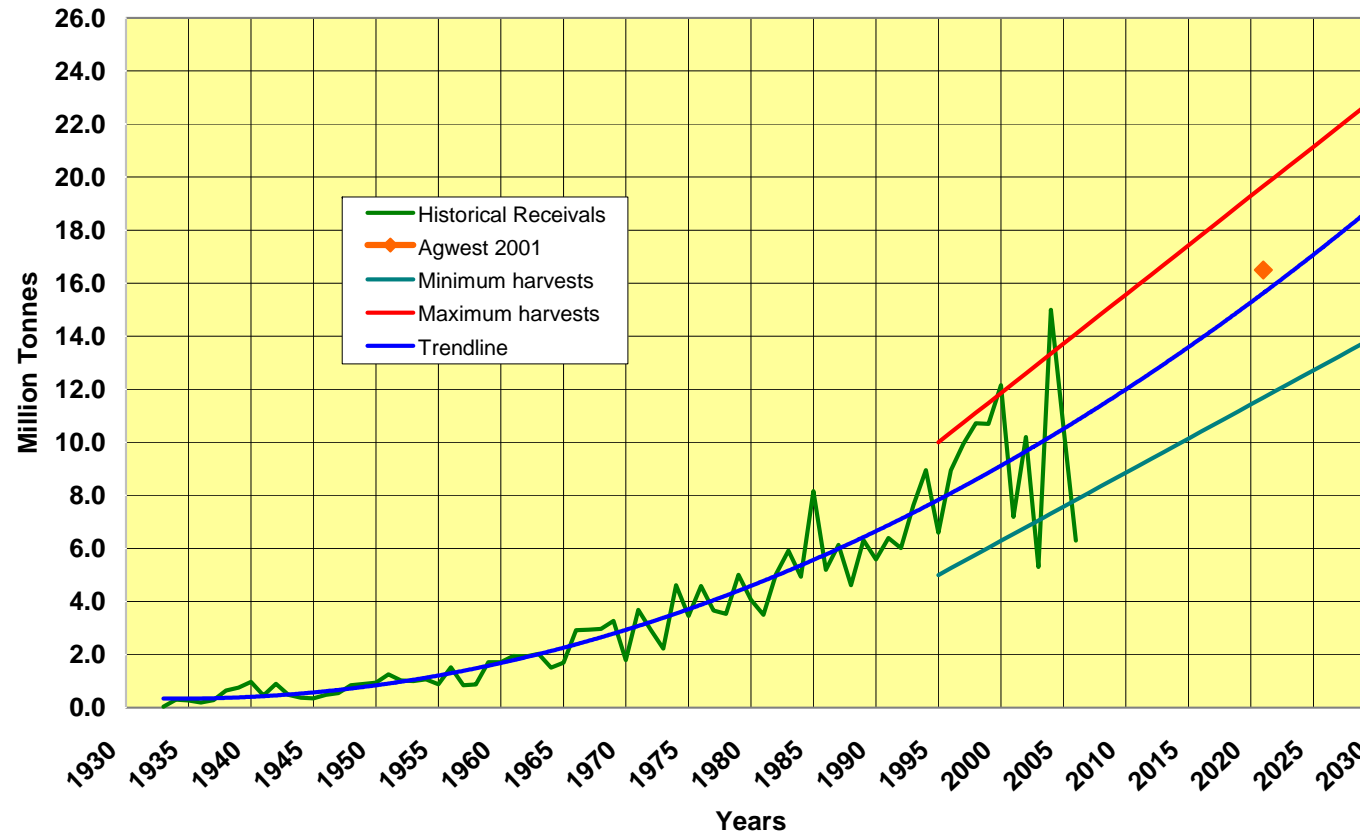
Major Freight Flows

WA Grain Supply Chain Task

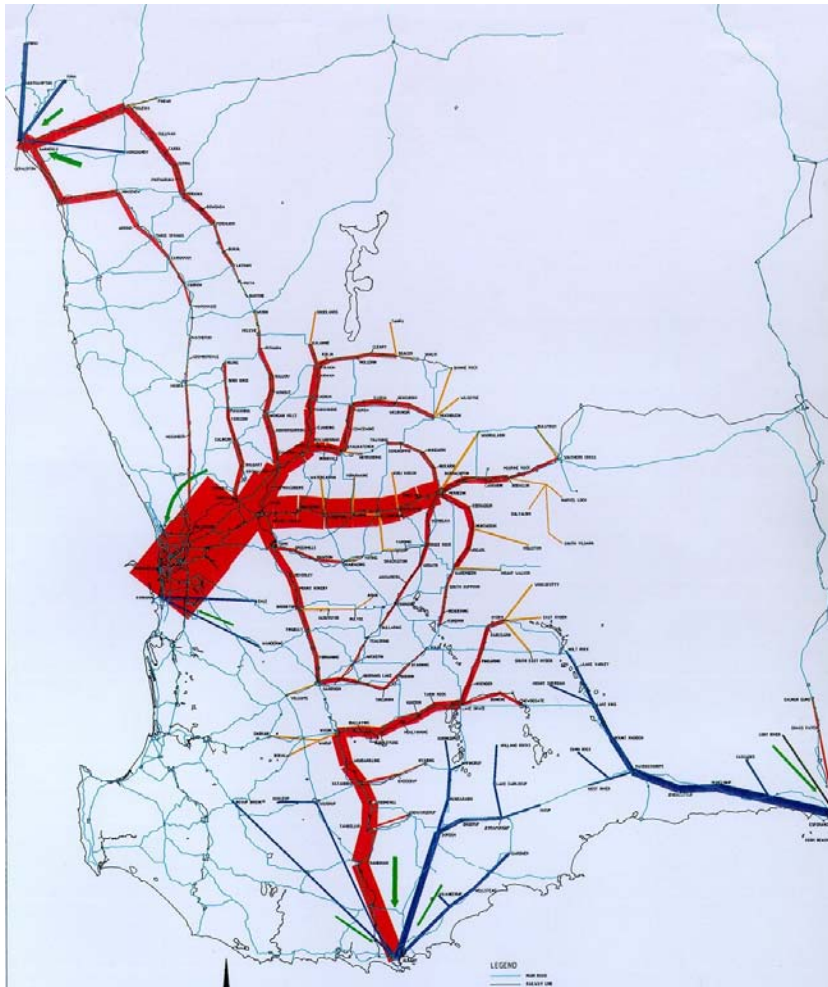


Projected Grain Receivals





Based on CBH Grain Receivals 1933 - 2006



WA Grain Supply Chain Task



Grain Flows

-  Rail – reception bin to port
-  Road – reception bin to port
-  Road – reception bin to reception bin
-  Road - farm to port

Supply Chain Planning



Harvest



Intermodal Activity



Transport



Weighing



Sampling



Intermodal Activity



Stockpile



Intermodal Activity



Transport



Intermodal Activity

OR



Intermodal Activity



Transport



Intermodal Activity



Stockpile



Intermodal Activity



Transport



Intermodal Activity



To Customer

Supply Chain Planning



The Role of Logistics

- Network or Supply Chain Design
- Transportation
- Inventory Management
- Warehousing/Materials management
- Logistics Information
 - Operations
 - Planning (including forecasting)

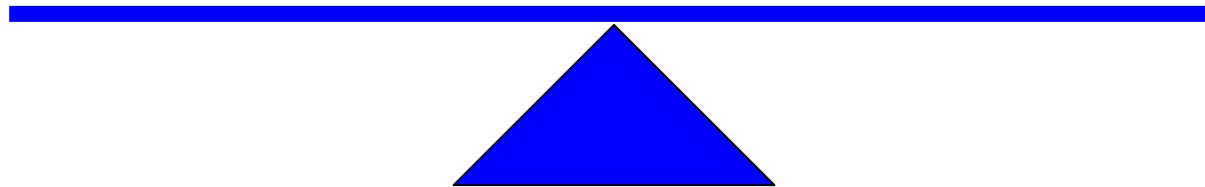
Supply Chain Planning



Supply Chain Objectives

Desired level
of customer
satisfaction

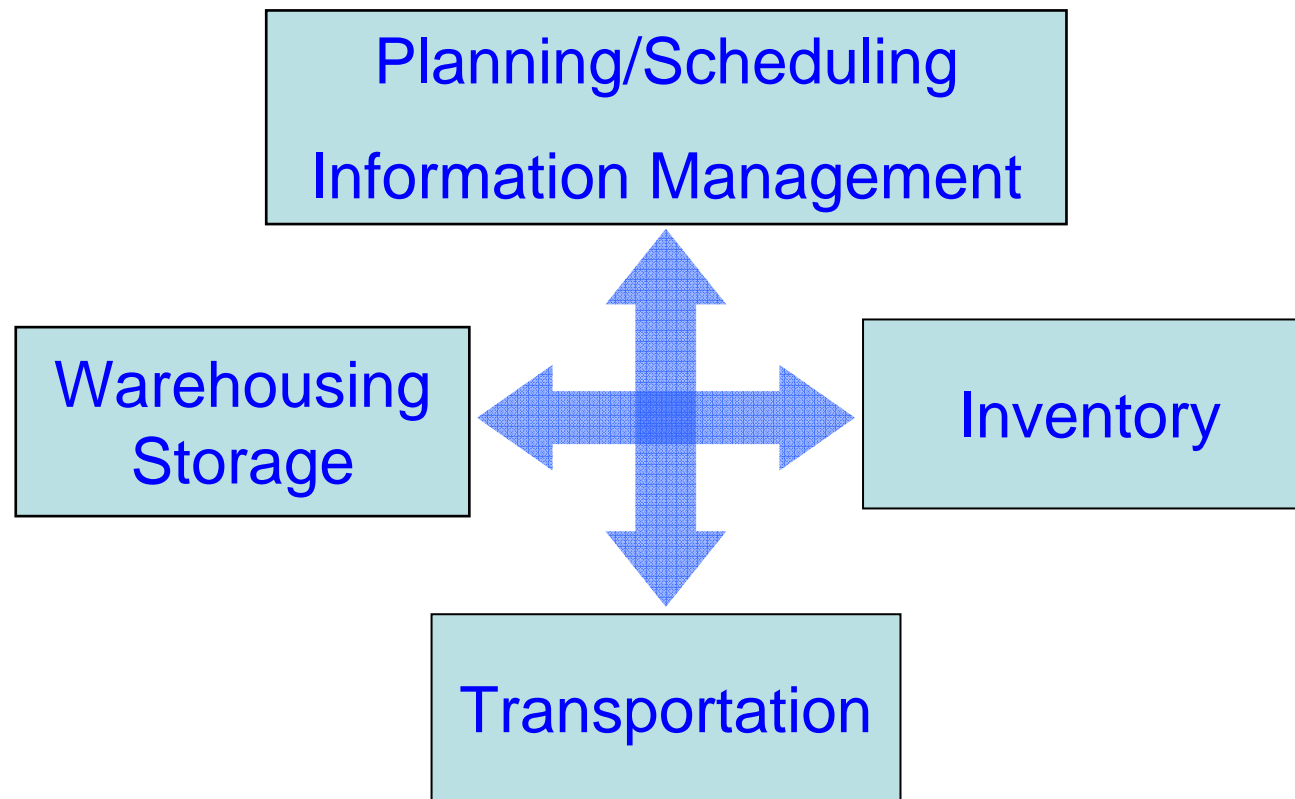
Minimum total
logistics cost



Supply Chain Planning



Logistics Cost Trade-offs



Supply Chain Planning



Supply Chain Operating Objectives

- Minimum variance
- Minimum inventory deployment
- Movement consolidation
- Rapid response & recovery capability
- Total quality approach
 - Performance certainty
 - Reliability & robustness

Supply Chain Characteristics



Strategic Receival Point Facilities



Supply Chain Characteristics



Train Loading Facilities



Supply Chain Characteristics



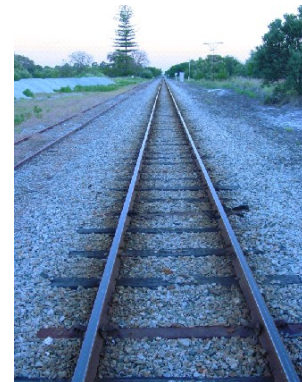
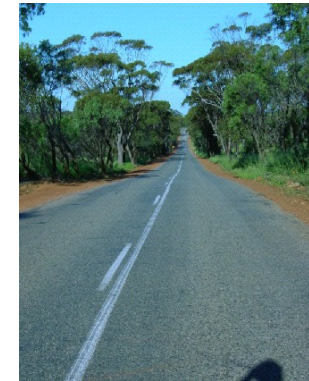
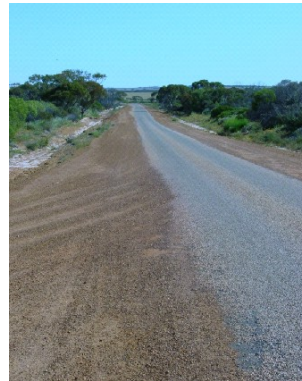
Train Configurations



Supply Chain Characteristics



Road and Rail Types



History – Reviews and Changes



- 1975 – South Western Australia Transport Study (SWATS) Note: review of total rail system including grain system
- 1970s to mid 1990s – rationalisation and upgrading of grain handling and rail transport facilities
- 1998 – A Review of the WA Grain Logistics System (GLS)

History – SWATS Review



- Objectives
 - Policies to ensure efficient use of resources
 - Co-ordinated approach to development
 - Implementation plan
- Participants
 - Led by govt
 - Input from industry and community stakeholders
- Report note
 - Regulatory policies developed in the 1920s and 1930s did not reflect a systematic approach to transport policy

History – SWATS Review



- Recommendations
 - Competition best basis on which to develop an effective transport system
 - Regulation of road transport minimised
 - Govt overview – maintain balance in the transport system
 - Road maintenance costs to be recognised and any subsidies to be transparent
 - Timetable for removal of regulation

History – 1970s to Mid 1990s



- Joint strategic planning by grain industry
- Major rationalisations and upgrading of grain handling and transport system
 - 50% less receival points
 - Approx 1000 km less railway
 - Improved loading and unloading facilities
 - Improved track axle loads and grades
 - Elimination of many low capacity and high cost rollingstock

History – 1998 Review of GLS



- Industry initiated review with Govt involvement
- Strategic plans shared between participants (incl CBH strategic receipt point concept)
- Reviewed track reduction options ranging from 200 km to 800km
- Outcome: rail network reduced by 200km

History – 1998 Review of GLS






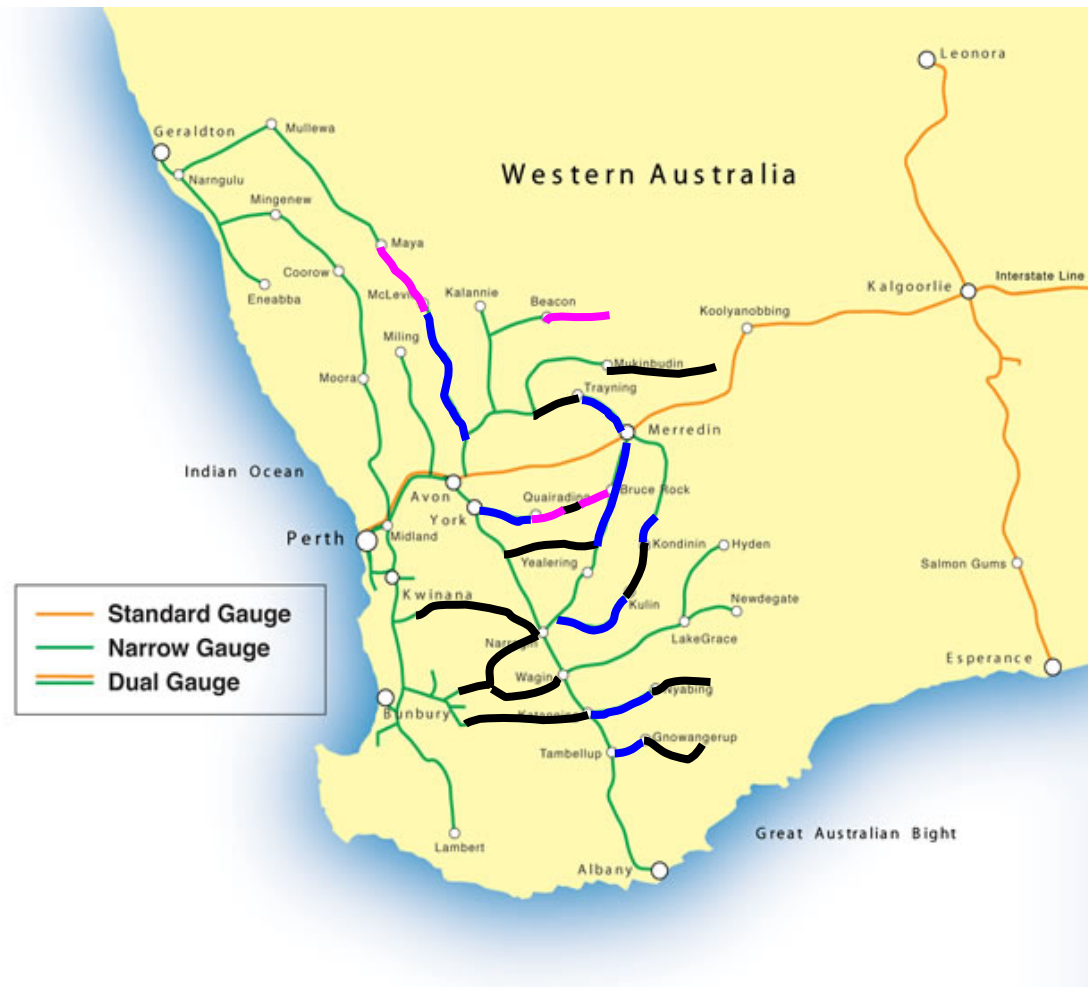
- Report Note: Over period 1980 to 1998:
 - Rail task increased – 2.50 to 7.25 mtpa
 - Wagon numbers reduced – 3000 to 600
 - Wagon utilisation increased - <1000 to 10,000 tonne/year

History - Rail Rationalisation

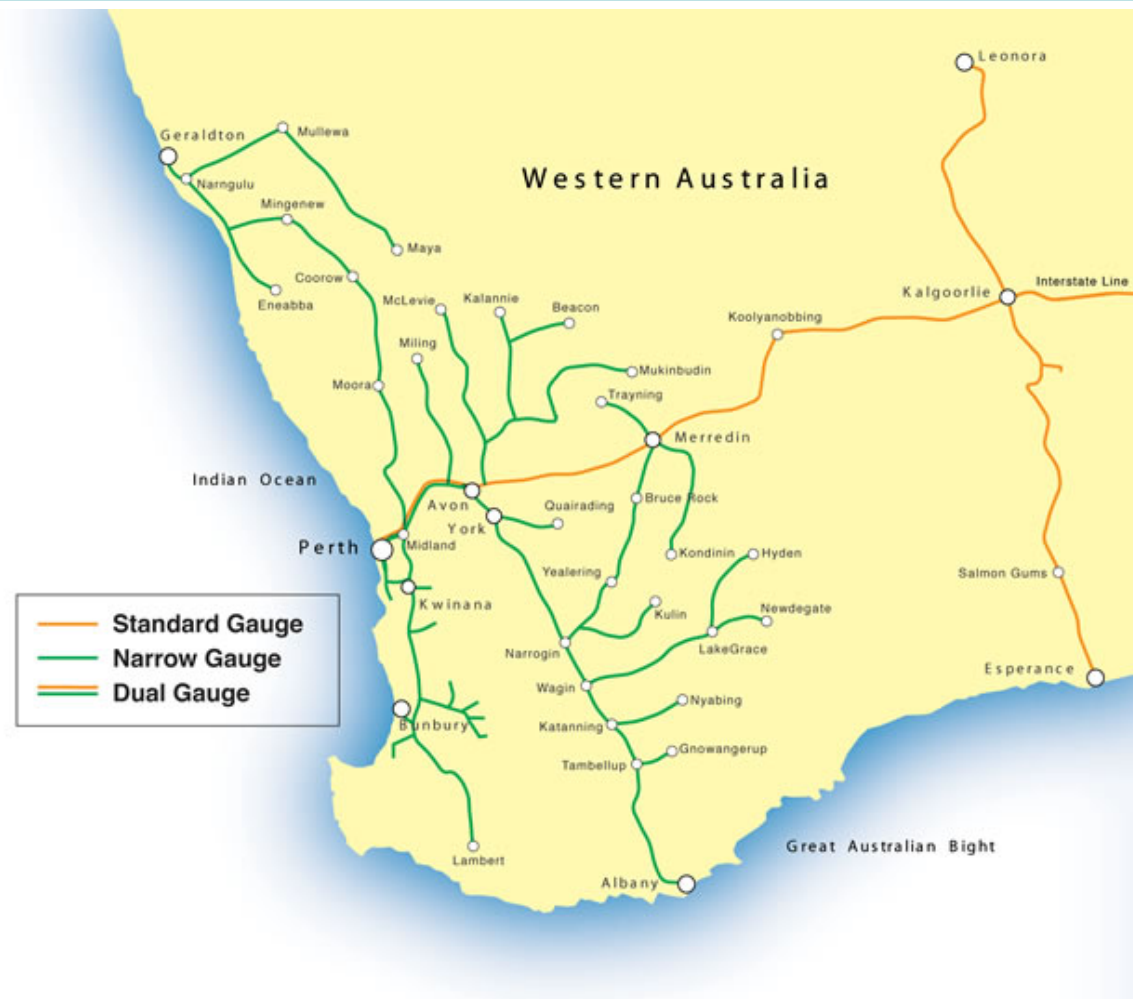


Rail Rationalisation

-  1960 - mid 1990's network closures
-  1998 GLC network closures
-  1998 GP21 Option 5 network closures



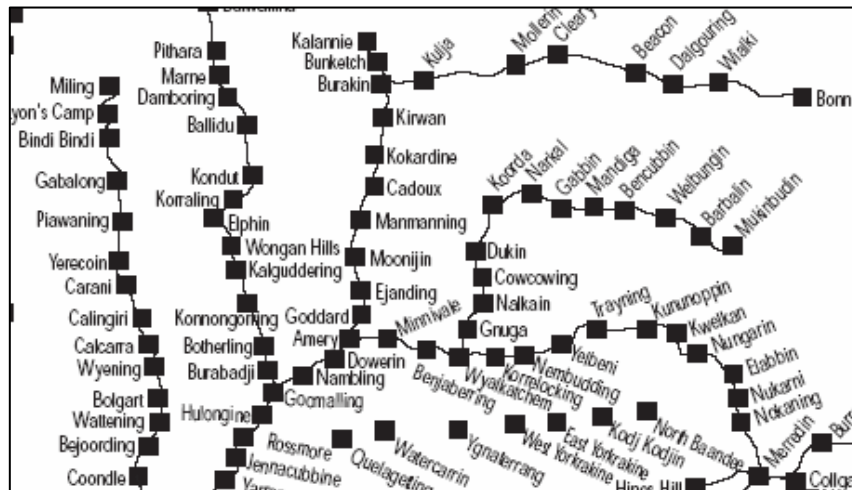
History – Current Network



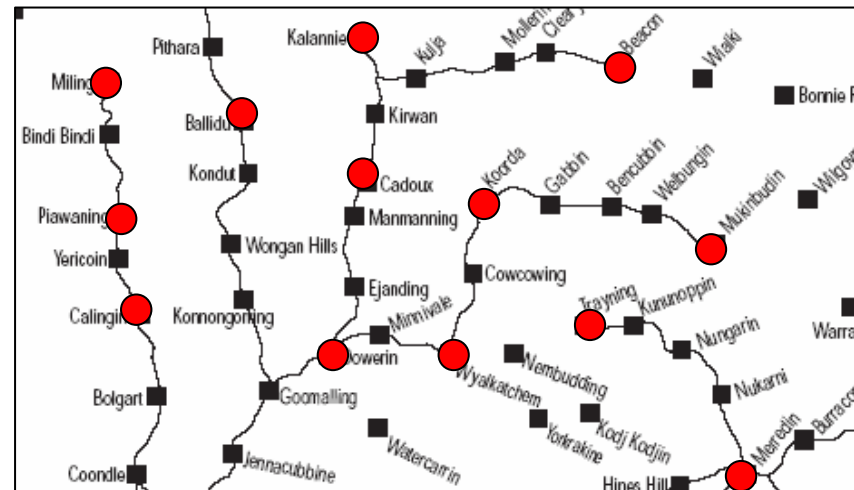
History – CBH Rationalisation



Portion of Network - 1965



Portion of Network - 2000



Approximately 50% reduction

● Strategic Receipt points

History – Structural



- 1989/90 - Grain transport deregulated
- 1998 - Rail access regime established
- 2000 - Rail industry privatised

Recent Review – Process Overview



- 2004/05 - Grain Infrastructure Group (GIG) established
 - Independent 'top-down' strategic review
(*WA Strategic Grain Infrastructure Study – WASGIS*)
 - Industry 'bottom-up' supply chain review
(*Grain Network Review – GNR*)

- 2005/06 - WASGIS & GNR presented to State Government Minister
 - Commercially based Grain Freight Supply Chain modelling

- 2006/07 - Presentation to GIG and Minister for endorsement
 - Included:
 - Likely network scenarios
 - Required investment & funding mechanisms
 - Stakeholder engagement strategy

Recent Review - Process



- Aims
 - Identify requirements for sustainable network
 - Determine infrastructure investment for next 25 years
- Key aspects
 - Consider future viability of rail system
 - Determine impacts on road network of any rationalisation (Network and CBH)

Recent Review - Process

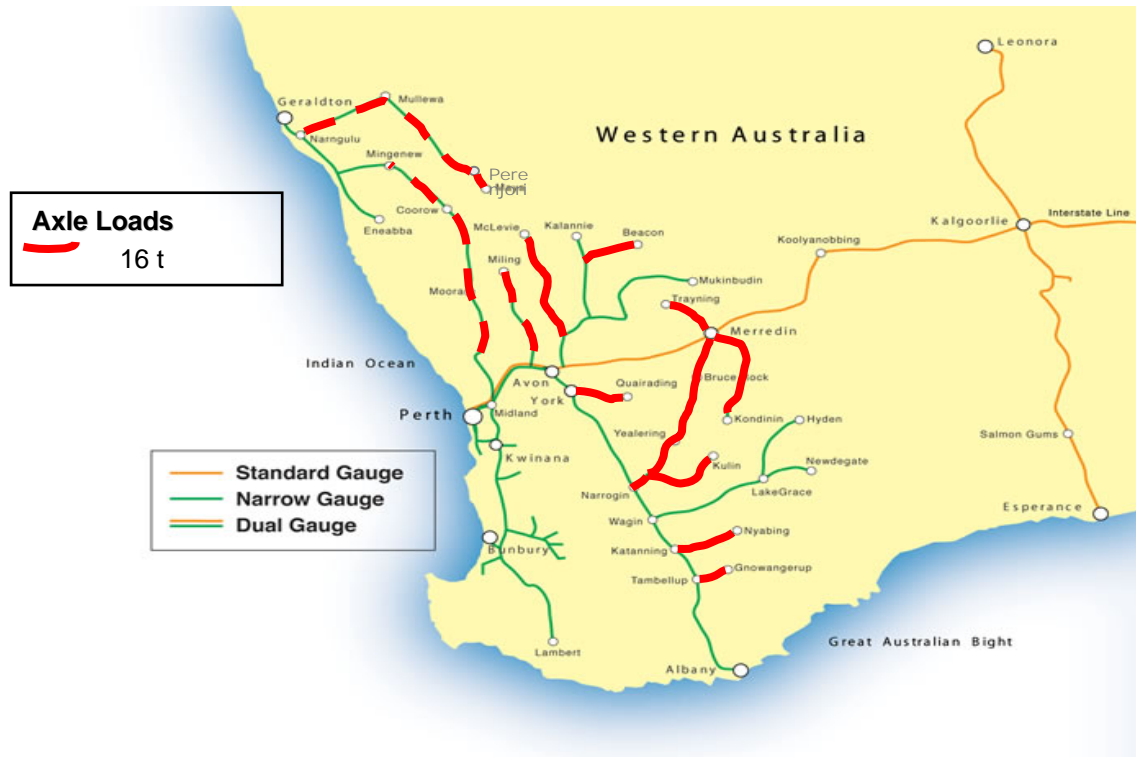


- Approach
 - Reference previous studies
 - Integrated total supply chain approach
 - Iterative approach involving all stakeholders
 - Develop commercial model with confidential stakeholder inputs

Recent Review - Process



- Rail Network Scenarios



- CBH Receival Point Consolidation

Recent Review - Process



- Grain Freight Modelling
 - Commercial & current industry data
 - Total supply model incl:
 - Above and below rail (ARG & WNR)
 - Above and below road (Industry & MRWA)
 - Storage & Handling (CBH)
 - Detailed road freight mapping & road infrastructure assessment

Recent Review – Possible Outcome



- A sustainable rail system is in best interests of growers and rural and urban communities
- A sustainable network will require investment in rail, road and terminals
- Road ‘under recovery’ will be an issue
- Close cooperation along the supply chain between industry and government is the way forward

Concluding Observations (1)



- The evidence in the WA grain industry demonstrates the benefits of taking a total supply chain approach
 - Joint government and industry planning and review
 - Developing total supply chain costs (incl under recoveries where appropriate)

Concluding Observations (2)



- Despite the past and potential network rationalisation in WA:
 - The rail task has grown & can grow further
 - Asset utilisation has improved & can improve
 - Recent study – possibly outcomes:
 - Tonnes to Port by rail – no change
 - Task (NTKs) – reduces by 10%
 - Asset utilisation – potentially increases by >50%
 - Above rail costs – potentially reduces by 10% to 25%

Concluding Observations (3)



- From a rail industry perspective the approach in WA is a good model:
 - The focus is on customers and on developing a common understanding of how a supply chain operates
 - Rail practitioners role is to educate others on how to use rail effectively
 - Likely outcome - rail used only where it is effective and efficient

The End

