

DEVELOPING A CIRCULAR ECONOMY WITHIN ROAD MAINTENANCE

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TAYSIDE CONTRACTS

APSE Roads Advisory Group - November 2014

COST OF WASTE DISPOSAL

| Active Waste Disposal Costs (UK Range) | | |
|--|------------|------------|
| 2012 | 2013 | 2014 |
| £73 - £127 | £81 - £135 | £89 - £143 |

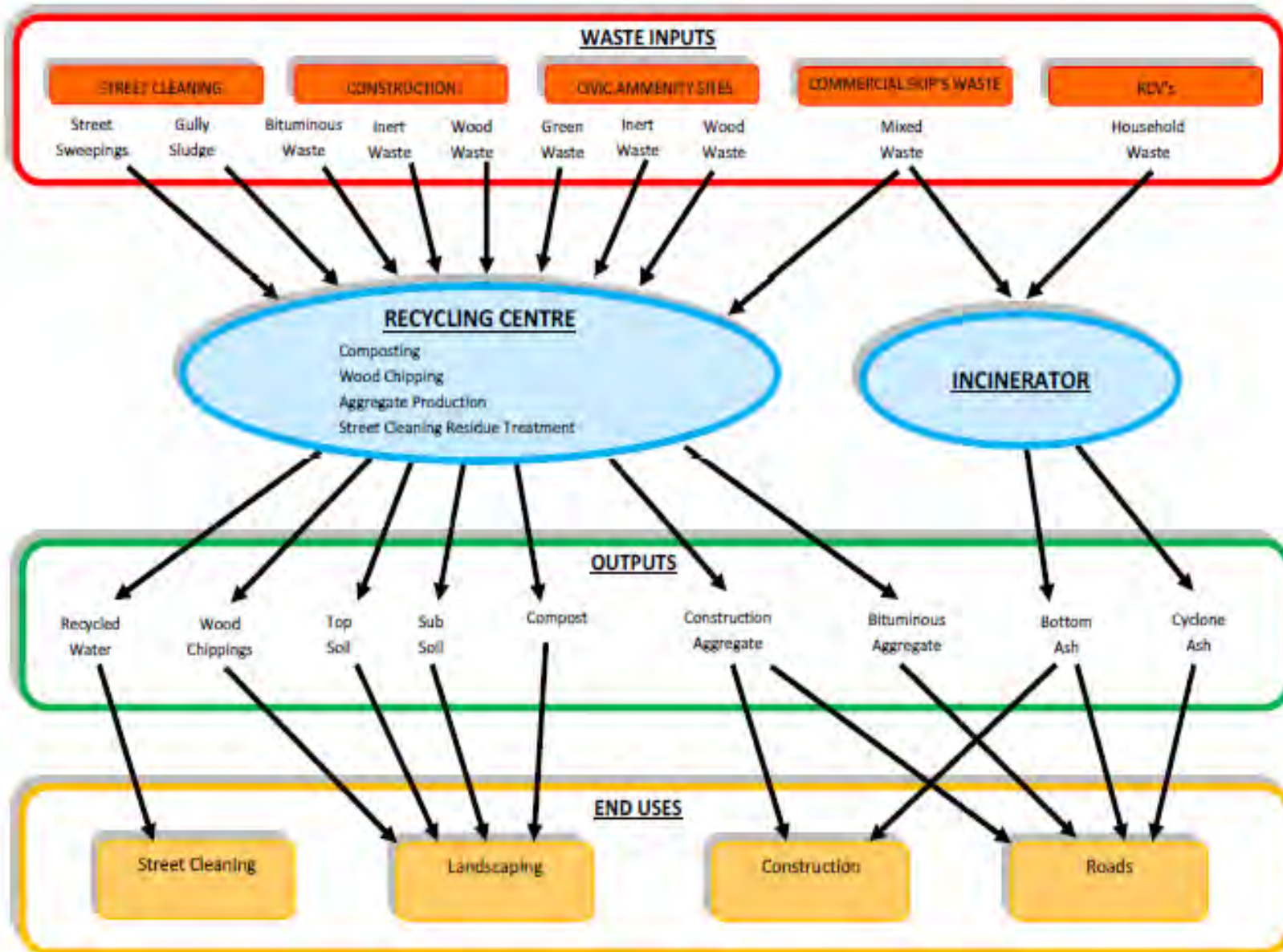
| Scottish Landfill Tax Rates from April 2015 | |
|---|---------------|
| Lower Rate | Standard Rate |
| £2.60 | £82.60 |

| Just for Comparison |
|-------------------------------|
| Cost of Laying 1 Tonne of HRA |
| £140.00 |

Presentation Will Cover:

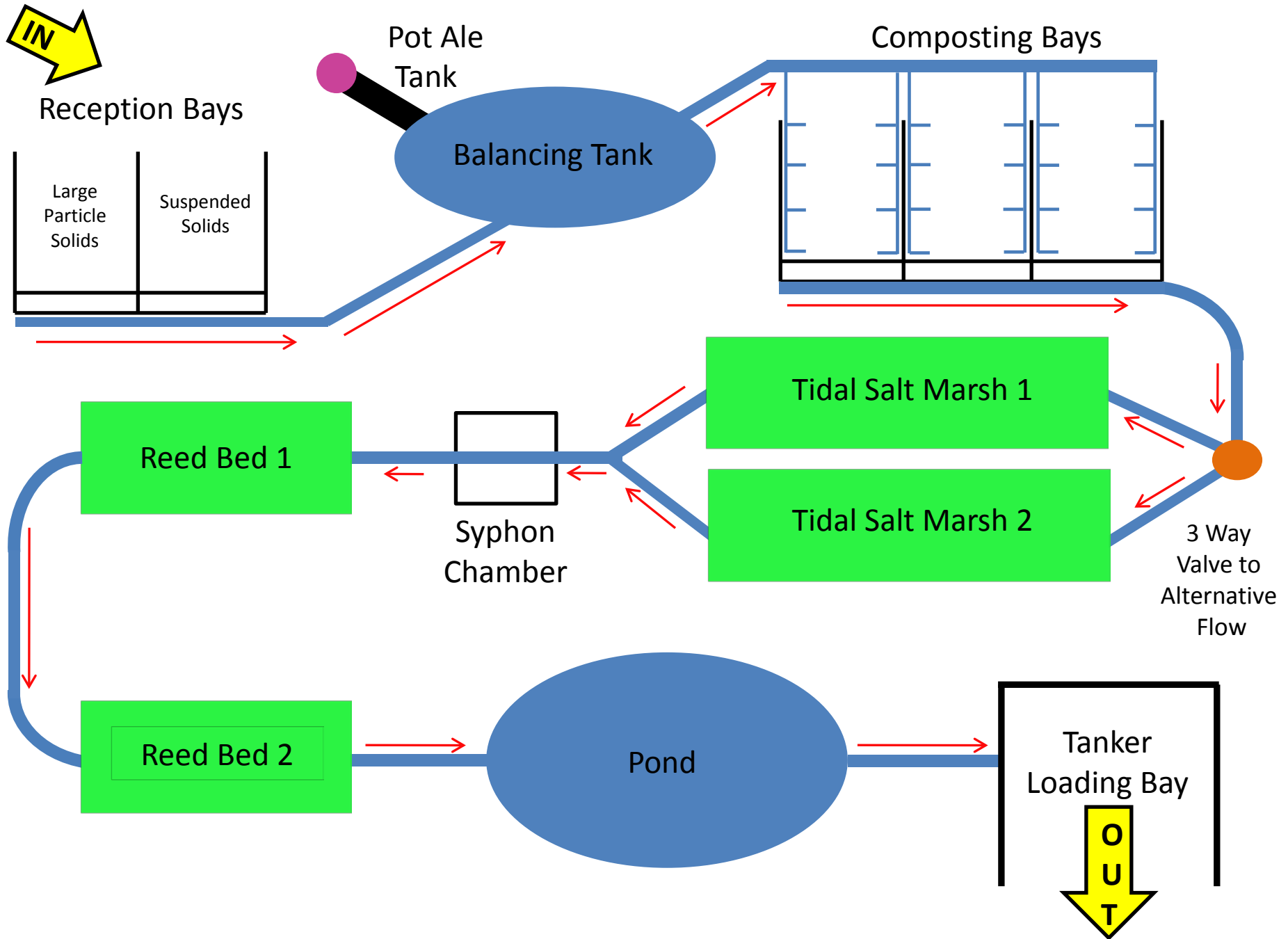
- Integrated approach within a roads context but also across other Council departments;
- Street cleaning residues (gully and street sweeping wastes);
- Aggregates and soils;
- Tayset.

Dundee City Council/Tayside Contracts – Recyclable Waste with Local End Uses



Street Cleaning Residues

- Various methods of treatment and disposal;
- Landfill after dewatering;
- Mechanical separation of components e.g. Gritbuster;
- Ecological treatment (reedbeds and composting).



Treatment Options

- Water reuse
- Options for solid fraction
 - Landfill (approximately 60% by weight)
 - Composting
 - Separation of fractions (mechanical plant required)
 - Organic
 - Grit and sand
 - Fine silt

Treatment Costs Per Gully

- Dried waste to landfill - £4.32
- Dried waste treated by others (composting by Fife Council) - £2.10
- Dried waste treated in-house (composting by Angus Council) - £0.67
- *Note – This is operational costs only. Capital costs over ten year payback is £0.23 per gully.*







Aggregates and Soils

- Source separate as far as practical – remove bituminous layers first during excavation;
- Clean bituminous planings carry highest value due to bitumen content;
- Screen out fines/soils from mixed aggregates;
- Crushing of clean stone and screening to suit demand.







Tayset®

A greener shade of black



What is **Tayset**®?

Tayset® is a high-performance road paving system made predominantly from recycled construction waste.



Knowledge Transfer Partnership (KTP)

- Aims of the project.


Develop a sustainable, low cost road paving system tailored to Scottish climatic conditions.

Method - 3-year partnership with the University of Dundee and Nynas Bitumen.

Funding - Part funded by Technology Strategy Board and the Scottish Government.

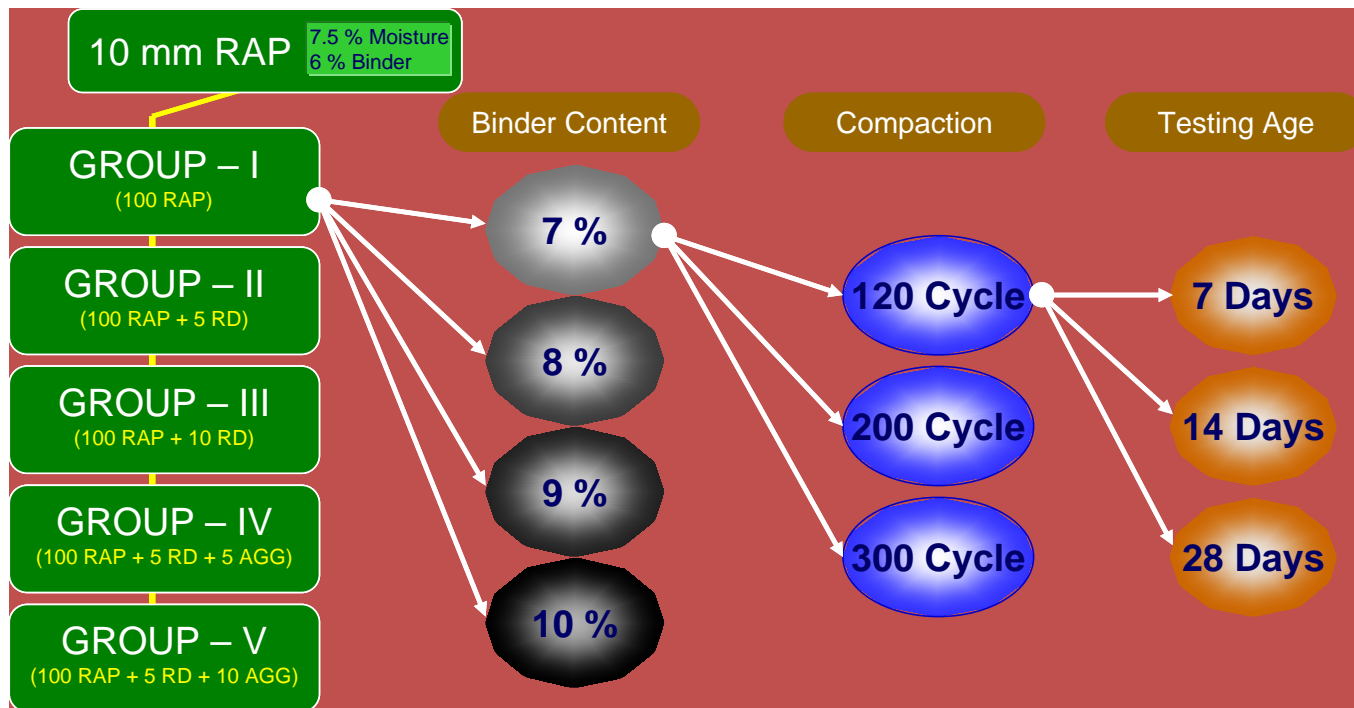
Knowledge
Transfer
Partnerships

'Europe's most successful
Knowledge Transfer Programme'



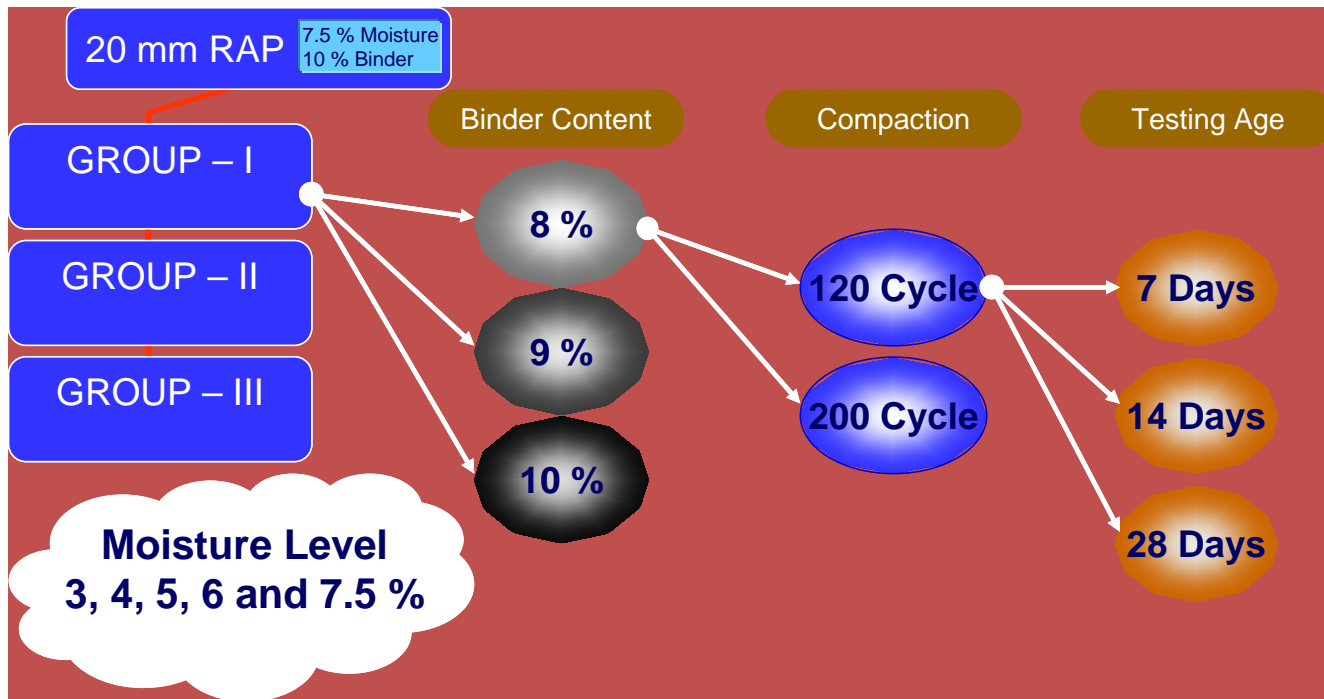
Laboratory Research Programme

Series of material combinations examined to assess optimum combinations in a laboratory environment.



Laboratory Research Programme

500+ mixes cast and tested for density and stiffness to determine optimum combinations



Stiffness > 2500+ MPa

Tayset[®] Launch - June 2008

John Swinney MSP launches new road paving system.



A sustainable road paving system

