



International Transit Studies Tools & Systems

FTA State of Good Repair Roundtable
July 22, 2010



Questions Posed

- ◆ What systems / tools do you use to maintain and report on
 - Inventory of Assets?
 - Operating / Maintenance Costs?
 - Condition of Assets?
 - Planned Rehabs / Replacement?



London – Asset Mgmt Development

- ◆ Creating a PPP – wanted to make sure the assets were going to be maintained & improved
- ◆ Backlog on capital program for LU 1 ½ billion pounds
- ◆ Monthly infrastructure charge to PPP
 - Responsible for required maintenance
 - Condition benchmarks were a requirement
 - Assets evaluated by residual life & risk
 - 22 ½ years to bring assets in SGR



The PPP contracts

- ◆ 3 Predominantly output based 30 year contracts (7.5 year reviews) that set out to achieve
 - Upgrade of all assets and increased system capacity
 - Significantly improved asset performance and reliability
 - No compromise to safety
 - Value for money
- ◆ PPP Asset Management Objectives:
 - Efficient and economic whole life asset management
 - Condition to minimize service loss risk
 - Return assets to overall good condition
 - Co-ordination of activities (re. Integrating the Network)

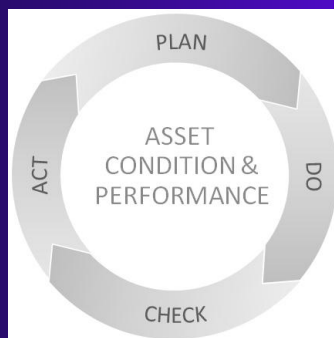


PAS 55 – Asset Management

- ◆ Optimal management of assets and related costs require you to evaluate risks and performance on a regular basis.
- ◆ Sponsored by Institute of Asset Management UK
- ◆ Created standard on how to measure
- ◆ Now being adopted as a European standard



Whole Asset Life Management



- ◆ Plan helps you to evaluate assets to:
 - build or obtain,
 - how best to maintain and use,
 - and how best to renew, recondition and/or dispose of
- ◆ Asset area
 - Asset Base
 - Performance & Condition requirements
 - Key intervention strategies
 - Asset Risk
 - Technology & development strategies



Asset Condition - objectives

- ◆ Asset Condition – measure of the condition of assets and the activities determining this.
 - Residual life – time to next “intervention” grouped A – D (10yrs+, 5-10, 1-5, & <1)
 - Residual Risk (functional concerns) / criticality code 1-4 (performance loss to non-compliance)
- ◆ Measured against condition improvement benchmarks
- ◆ Yearly ‘snapshot’ of asset condition using data from normal business processes



Condition vs. Performance

- ◆ Benchmark set to evaluate all assets and create a plan of replacement
- ◆ Performance is a totally separate issue that can not be confused with condition
 - “We will keep our assets safe & reliable”
 - The benchmarks will prove “economic inefficiencies”
 - Show which assets are in a bad state of repair
- ◆ “Assets are fit for purpose”



London – Other systems



- ◆ Coach life & cost is low
 - Keep buses only 3 years & then sell them
 - Cost of diesel hybrid coach = 100,000 pounds approximately \$150k
- ◆ Facilities – outside of rail were not managed within London systems (3rd party) therefore not addressed.



Nottingham Tram

- ◆ 30 year Agreement – (similar to LU - PPP) with regular condition review
- ◆ Assets need to last 5 years beyond life
- ◆ 7 years – doing a full analysis review of system
- ◆ Funding set aside for mid-life rehab of vehicle





Nottingham

- ◆ Road Infrastructure – System called HAMS (Highway Asset Mgmt System)
 - Internal inventory of all assets
 - Condition surveys done annually
 - Bus Infrastructure – part of HAMS
- ◆ VOSA – Vehicle Operator Service Agency
 - Standard for bus life cycle (12 – 15 yrs)
 - Annual test (similar to our highway inspection)
- ◆ Build into Bus Contracts to do audits of vehicles after one and three years of service



Strasbourg



- ◆ Full inventory of all assets by component
- ◆ Rolling Stock have a heavy maintenance plan
- ◆ Infrastructure – now doing based on PAS55
- ◆ Condition assessments done – but not regular
- ◆ Life Cycle Costing is used and prove ROI



Karlsruhe

- ◆ Application for Funds – require a cost benefit analysis / life cycle
- ◆ Maintenance on tracks & rolling stock is based on inspection & driver feedback
- ◆ Major backlog
- ◆ No separate asset assessment



Berlin Standards

- ◆ OEM required to give full maintenance plan for all rolling stock, equipment & infrastructure.
- ◆ Required to maintain a 10 year capital plan – always know back log



- ◆ Vehicles (trams, buses) – rehab / major maintenance plan after 8 years
- ◆ Bridges – require major maintenance after 10 years





Oslo

- ◆ Oslo performs a full assessment of entire system every 3 years
- ◆ Twice a year – independent firm drives all tracks and assesses condition
- ◆ Analysis is presented to Strategic Planning for use of funds



Summary of Findings

- ◆ Europe is adopting PAS 55 – “whole life asset management” – industry standard.
- ◆ Many challenges to collect information:
 - Cost of collecting must be part of normal business
 - Need to collect “consistent” data @ front line and get into system
- ◆ Evaluate risk of taking money out of budget
 - what does it do to rest of operation?



Summary of Findings (cont)

- ◆ Inventory is easy part – need purchase cost & flexible replacement value
- ◆ Condition Assessment requires residual useful life and criticality function
- ◆ Assessment must be done by your front line as part of your inspections, but must set standards / benchmarks to be consistent
- ◆ Should do independent assessment



LBT Take Away

- ◆ Rolling Stock Plan is thorough
- ◆ Need Comprehensive Facility Plan
 - Full Inventory of Facilities & Equipment
 - Review of all PM's
 - Whole Life Asset Replacement
- ◆ Create a Condition Assessment & tie to PM
- ◆ Our Enterprise Asset Management system (Mincom) manages whole life
 - Equipment Register
 - Maintenance Materials system
 - Condition assessment
 - Asset Prioritization