10.0 Monitoring

The SEA regulations make clear the requirement to monitor the implementation of the plan with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action.

Monitoring should be an important factor in the implementation of any plan, and should occur over the course of the strategy. In particular monitoring helps to answer the following questions:

- Is the JMWMS contributing to the sustainability of Essex in the way envisaged?
- Have there been any unforeseen impacts (positive or negative) that have arisen from the strategy? Do these impacts require remediation?

It is therefore important that the correct monitoring framework is put in place for this JMWMS. However, such a framework should ensure that while the above questions can be answered, the requirements of the framework are not over-onerous on the councils involved, since it will be the responsibility of Essex County Council to gather all of the required information and to implement any remedial action should any negative impacts be identified.

It will also be essential for ECC to maintain the monitoring framework and baseline information as appropriate. The monitoring proposals below are intended to be flexible over the course of the strategy, taking into account that technical and scientific advances may mean that alternative measures for monitoring become more appropriate or accurate for the purpose and possible more cost effective. Table 21 sets out the proposed monitoring framework for the JMWMS.

Table 21: Proposed Monitoring Framework

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
Env1	Reduce requirement for mineral and primary material extraction globally.	Aggregate recycling and composting performance of Partnership authorities Amount of energy generated / recovered (and form of energy generated / recovered) Total waste generated	Annually	WCAs, WDA, contractors Published sources for materials recycled and energy generated	Less than 3% improvement in any one year
Env2	Minimise global bio-diversity & geological impacts.	As Env1	As Env1	As Env1	As Env1
Env3	Reduce reliance on road transportation of waste.	Road miles travelled by vehicle fleet Proportion of total distance travelled undertaken by road	Annually	WCAs, WDA, contractors	Greater than 10% increase in any given year Greater than 40% increase over baseline (It is expected that this will increase. The aim should be to ensure this increase is constrained).
Env4	Minimise net energy balance requirements.	Energy use and outputs	Annually	Site audits and operator information Published sources for materials recycled	Less than 3% improvement in any one year
Env5	Minimise local air pollution as a result of	Air pollutant emissions of SOx, NOx, VOCs,	Annual	Operators / Environment Agency	Increases in emissions in Essex to levels above

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
	waste management activities.	dioxins, Cd, Cr, Pb particulates.		Clean Air for Europe / Methodex database	£2 per tonne equivalent (all waste) or £4 per tonne for any specific facility
Env6	Minimise greenhouse gas (GHG) emissions arising from waste management activities.	Greenhouse gas emissions from waste management activities in the County Fuel used by waste management vehicles Quantity of waste sent for recycling, and end use of materials recycled Quantity of waste sent for different treatments	Annually	WCAs / contractors & WDA Published sources for emissions from individual activities and offsets associated with recycling, energy generation, application of organic matter to soil	Improvement of less than 3% in any given year
Env7	Minimise impact on cultural heritage with particular reference to historically and architecturally significant buildings, landscapes and archaeology.	Emissions of acidifying air pollutants (see also Env12)	Annually	Operators / Environment Agency Clean Air for Europe / Methodex database CMLCA impact assessment weightings for acidification	Per tonne increases, in any given year, from a given facility
Env8	Reduce contamination of soil.	Amount of biologically treated material applied to land and concentration of potentially toxic elements Amount of material	Annually	WCAs / contractors & WDA	Unclear

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
		landfilled			
Env9	Improve organic matter content of soil	Amount of biologically treated material applied to land Stability / maturity of material applied	Annually	WCAs / contractors & WDA Humus reproduction rates for materials of differing stability / maturity	Decline in total C applied to soils in any given year
Env10	Manage waste in accordance with the hierarchy.	As Env 1 Quantity of waste landfilled	Annually	Waste Data Flow (WCAs / WDAs)	Significant shortfall on targets: 40% household waste recycled by 2010 45% household waste recycled by 2015 60% household waste recycled by 2020
Env11	Manage waste at the nearest appropriate facility.	Distance to facilities used relative to facilities available	Annual review / update Contract review dates	WCAs / WDAs / contractors Environment Agency Waste planning Authority (ECC)	Where it becomes clear that distances travelled are excessive relative to what is necessary
Env12	Minimise landscape impacts.	Number of facilities in the area Total area occupied Total height of buildings	Annual review / update	WCAs / WDAs / contractors/WPA	Unclear
Env13	Minimise net water use as a result of waste management activities.	Water consumption by facilities in use	Annually	WCAs / WDAs / contractors Benchmark	Total water consumption increases by more than 50%

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
				performance for facilities	above baseline Water consumption above benchmarked norms at any given facility
Env14	Reduce the incidence of fly-tipping.	Reported incidents of fly-tipping	Annually	Fly Capture WCA / WDA information	Successive year on year increases
Soc1	Provide equitable and convenient distribution of waste services and publicly accessed facilities.	Number of households covered by collection services of differing scope Density of RHWCs (number per 10,000 hhlds) Density of bring banks (no of households per site)	Annually	WCAs/WDA / ONS	Where differences of scope and coverage widen (subjective) Where density is in decline for more than 3 consecutive years Where density is in decline for more than 3 consecutive years
Soc2	Involve all sections of the community in waste decision making and local action by promoting waste awareness.	Number of strategic decisions regarding waste management which are taken without community involvement	Annually	WCAs / WDA	Where non-emergency strategic decisions have not involved communities
Soc3	Promote positive and permanent behavioural change among target groups to encourage sustainable waste management.	Number of initiatives designed to promote behavioural change Financial support for initiatives	Annually	WCAs / WDA	Decline in number of initiatives Real terms decline in funding

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
Soc4	Minimise nuisance impacts.	Number of breaches of waste management licence conditions at facilities handling MSW Number of incidents reported to officers	Annually	Environment Agency	Repeated breaches at any facility Successive year-on-year increases
Soc5	Protect the health of local residents and populations beyond the boundaries of the County.	See Env 5 above	See Env 5 above	See Env 5 above	See Env 5 above
Soc6	Provide flexibility in waste management solutions so to protect waste management choice for future generations.	Proportion of waste for which minimum tonnages are contracted to enter a given facility, and duration of such agreement	Annually	WCAs / WDA	Where more than 40% of waste is affected by such agreements
Econ1	Minimise cost of waste management.	Cost of waste management per household	Annually	Consolidated waste management budget for the partnership authorities, including outlays on / revenue from landfill allowance purchases / sales, and including contributions from PFI Credits	Increases by more than 3% above RPI
Econ2	Maximise job-creation and development of skills.	Local employment as a consequence of waste management activities	Biannually	Information from WCAs / WDAs and contractors / reprocessors	Any decline in total waste management-related jobs

	Objective	Indicator / Information Required	Frequency	Data Source(s)	Suggested Trigger for Remedial Action
Econ3	Develop joint working / partnerships between different regions and with the private sector to promote best practice and economic efficiency.	Cashable efficiency savings associated with partnership working	Annually	WCAs / WDAs	Standstill relative to baseline Subsequently, any three year period with no additional savings