NEW YORK
STATE OF
OPPORTUNITY

Department of
Environmental
Conservation

Hazardous Waste Reduction Planning

Tips for Successfully Developing Your Plan

May 2017

Hazardous Waste Reduction Plan (HWRP)

- Established under Article 27, Section 0908 of the Environmental Conservation Law (ECL 27-0908)
- Applicable to generators ≥25 TPY or TSDFs
- Intent of program:
  - To prevent pollution through hazardous waste reduction planning
  - Promote waste management hierarchy

Program Requirements

- Develop, implement and submit a written HWRP by July 1
- Submit Annual Status Report (ASR) one year following submittal of HWRP, by July 1
- Submit Biennial Update (BU) July 1 in year after ASR

Year 1	Year 2	Year 3	Year 4	Year 5…
HWRP	ASR	BU	ASR	BU…

Common Issues

Mistakes, Misconceptions & Omissions

Which waste streams to include

- 90% of HW generated – *this includes hazardous wastewaters*
- Waste streams 5 TPY or greater
- All acute waste streams

These waste streams go into Table 1

Table 1

COMPANY NAME	EPA I.D. NUMBER

TABLE 1

WASTE STREAM ID NUMBER	NAME OF WASTE	EPA HAZARDOUS WASTE CODE(S)*	SOURCE OF GENERATION	DISPOSAL MANAGEMENT METHOD CODE**	QUANTITY OF WASTE GENERATED (TONS)				PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED)			
					2012	2013	2014	2015	2012	2013	2014	2015

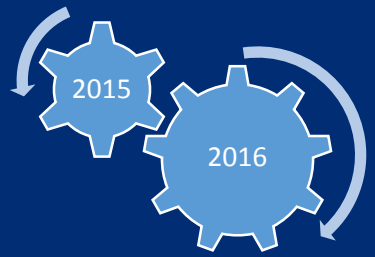
- **Be sure to include EPA Waste Codes, Source Codes and Disposal Mgmt. Method Codes**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Calculating the Production/Activity Index

- Example: Index = Parts Produced 2016 / Parts Produced 2015
- Example: Index = Labor Hours 2016 / Labor Hours 2015
- If using sales revenue ($) – adjust for inflation
- If first submission (no previous data), index = 1

$$Index = \frac{A_{2016}}{A_{2015}}$$



Estimating Waste Management Costs

If figures are available, please estimate using the following:

- Transport/disposal costs
- Treatment costs (chemicals, electrical, etc.)
- Storage costs (drums, warehouse space, etc.)
- Regulatory fees
- Labor costs

Waste Reduction Alternatives Evaluation

- Substitution of non-toxic/less toxic inputs
- Reformulation or re-design of end products (i.e., product re-design)
- Modification or re-design of production processes or equipment (e.g., increased efficiency)
- Changes in usage, storage, and handling (e.g., inventory control)
- Closed-loop reclamation, re-use, and recycling (i.e., recycle waste back into process)
- On-site/off-site recycling to reduce amount to be treated/disposed (e.g., off-site reclaim)

Waste Stream	Material Substitution	Product Re-design	Process Modification	Storage and Handling	Closed-loop reclaim	On-site/Off-site Recycle
WS-1	**Feasible**	Won't meet spec	**Feasible**	**Feasible**	Attempted (Ineffective)	Not Available
WS-2	ROI > 5 years	Won't meet spec	**Feasible**	ROI > 5 Years	**Feasible**	**Feasible**

Waste Reduction Alternatives Evaluation

Any waste reduction alternatives that are selected (feasible/practicable) need to be put into Table 2, along with:

- Estimated waste reduction (in tons);
- Schedule for implementation;
  - If multi-step implementation – give schedule for next step
- Return on Investment (ROI);
  - Various methods – Payback period, annualized costs, increased rate of return

Table 2

COMPANY NAME	EPA I.D. NUMBER

TABLE 2

WASTE STREAM ID NUMBER	NAME OF WASTE	WASTE STREAM AFFECTED	REDUCTION PLANS/PROJECTS	ESTIMATED WASTE REDUCTION (TONS)	METHOD USED TO CALCULATE *ROI	*ROI (EST)	GOAL DATE	REMARKS

- **Fill in all columns**

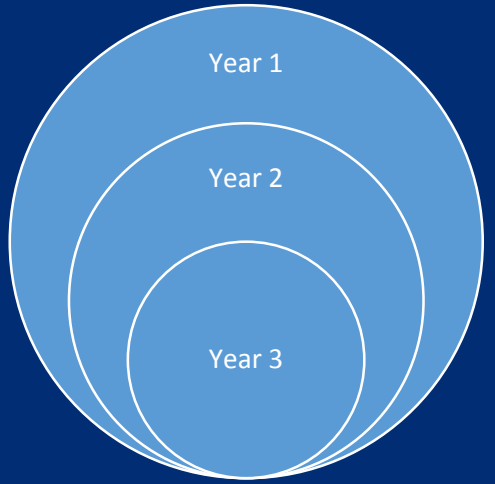
Waste Reduction Policy & Training

- Goals and objectives
- Statement of top-level management commitment
- Method for accomplishing top-level support (reward/recognition program)
- Method for communicating policy to employees
  - Training – Needs to train employees on implementation of HWRP. Plan should discuss:
    - Format
    - Frequency
    - Content

Waste Reduction Measurement

- Compare HW generation before and after implementation
- Take production levels into account

Year	Production (Parts)	Prod. Index	HW Generation (lbs)	% Reduction	Reduction Index
2014	1,000,000	1.00	240,000	NA	NA
2015	1,200,000	1.20	230,000	4.17%	1.25
2016	1,000,000	0.83	200,000	13.0%	1.04



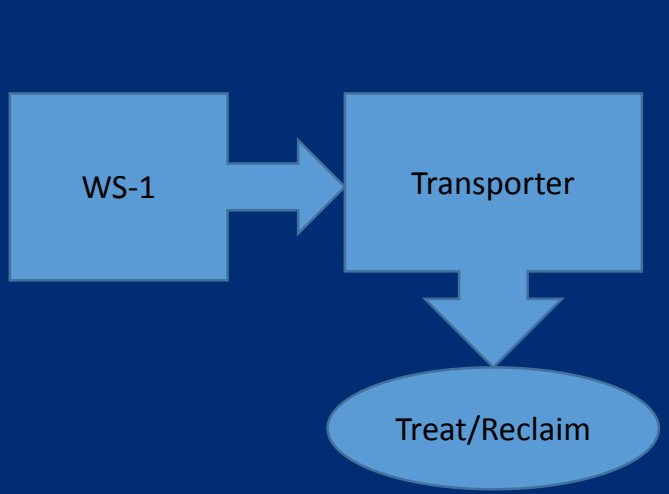
$$\%\ Reduction = \frac{HW\ Gen\ 2015\ - HW\ Gen\ 2014}{HW\ Gen\ 2014}$$

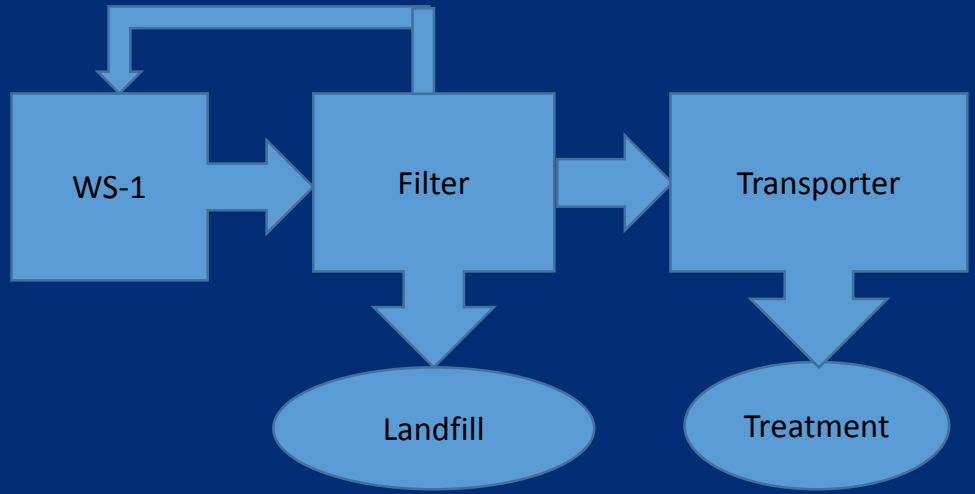
$$Reduction\ Index = \frac{Production\ 2015\ /HW\ Gen\ 2015}{Production\ 2014/HW\ Gen\ 2014}$$

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Transference of HW to Other Media

- Does the HW reduction alternative being implemented result in transfer of HW to other environmental media (i.e., air, water, land)?
- If so, is there a benefit to such transference (refer to hierarchy)?

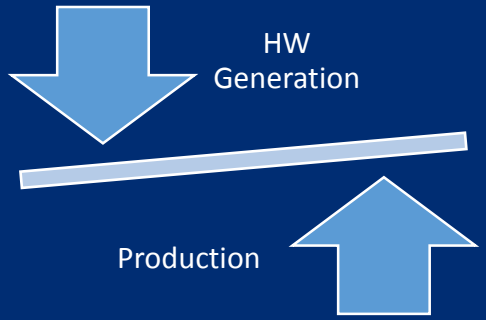




Annual Status Reports (ASRs)

ASRs

- Update Table 1 and Table 2
- Describe progress in achieving time schedule for implementation laid out in HWRP (or BU)
- If not implemented as planned, provide reason
- If reduction alternative is not achieving reductions, another alternative may be selected

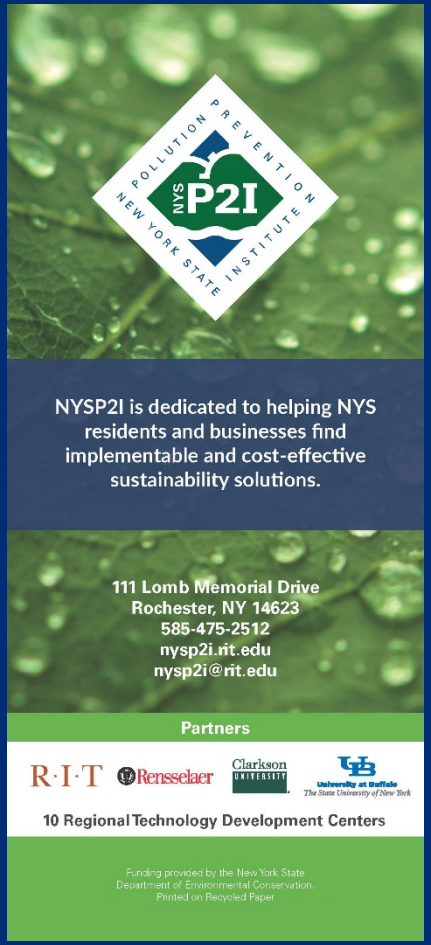


Biennial Updates (BUs)

BUs

- Updated Table 1 – be sure to include new acute waste streams, streams over 5 TPY or streams newly included in 90%
  - If new streams, plan should also include:
    - Narrative description of source of generation, method of disposal
    - Productivity index
    - Evaluation of feasibility and practicability of implementing reductions (incorporate this into Table 2)
- Updated waste management cost estimates
- Updated Table 2 – be sure to note any completed plans, re-evaluate existing plans, and provide updated schedules as necessary
- Updates to training program (if any) and updated corporate goals, resources, etc.

Support From NYSP2I



- **NYSP2I can assist with finding waste reduction alternatives, but is not available to assist with writing the HWRP (or subsequent updates).**
- **NYSDEC staff can assist with any questions on the development of the HWRP.**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Questions?

Thank You

Pollution Prevention Unit

Division of Materials Management

(518) 402-9469

HW.ReductionPlanning@dec.ny.gov