



Construction & Demolition Materials Diversion

November 19, 2014



King County

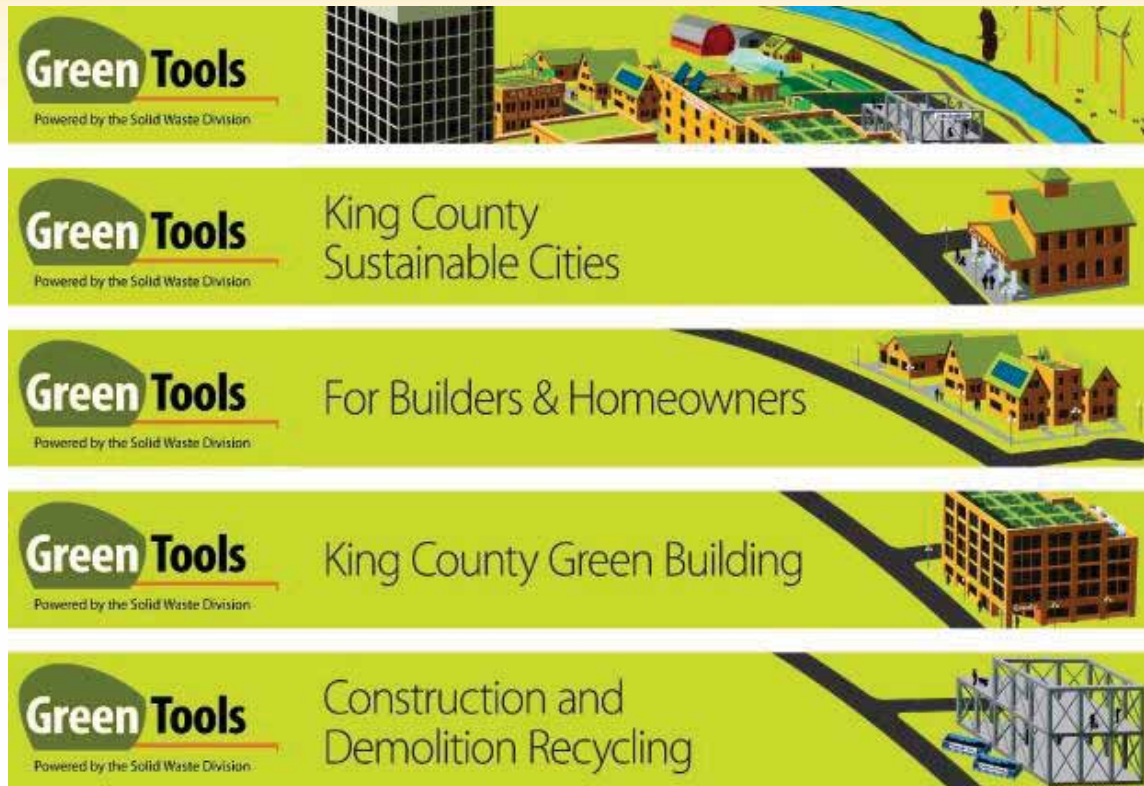
Department of
Natural Resources and Parks
Solid Waste Division

Waste
Prevention

Resource
Recovery

Waste
Disposal

King County GreenTools serving all stakeholder groups



What is C&D?

- Short-hand for “Construction & Demolition”
- Materials generated during construction and demolition activities which add no further value to the project
- “C&D Waste”
- “C&D Materials”
- “C&D Debris”

Definitions

- Waste – Materials for which the effort to extract value exceeds the value of the material itself
- Recycle – Processing a material into something new
- Salvage – Recovering materials which have reuse value without extensive processing
- Diversion – Guiding materials of value away from the waste stream

Benefits of Recycling Construction Debris

- Cost is often lower
- Green Building certification credits
- Reduces need for creation of new materials
- Provides local jobs and strengthens economy
- Reduces landfill space
- Saves energy and water
- Keeps the project in compliance with local regulations

Relevant C&D Regulations

- King County Green Building Ordinance
- City of Seattle ordinances
- King County ordinances
- Regional Code Collaboration - City ordinances

Green Building Ordinance C&D Requirements

- Submit a waste diversion plan at 30%
- Submit a waste diversion report at completion
- Achieve diversion rates of:
 - 80% by 2016
 - 85% by 2020

Seattle Ordinance Overview

- Banned materials may not be sent to a landfill
- Use of certified facilities is encouraged
- Must submit:
 - Waste management plan
 - Waste management report
 - Salvage assessment
- Threshold: 750 sqft or \$30,000

Seattle's Banned C&D Materials

- ABC – 2012
- Metal – 2014
- Cardboard – 2014
- New gypsum – 2014
- Clean wood - 2015
- Plastic film wrap - ?
- Asphalt shingles - ?
- Carpet - ?



King County C&D Policy Background

Existing C&D Management System

- Inter-local Agreement's with cities require that King County safely manage solid waste, including C&D.
- Contracts with Republic and WMI expire Sept 2014; extending until Sept 2015 to develop alternative approach.
- Primary focus was disposal options
- Exclusive contracts no longer an option

Going Forward

- New Contracting Approach
- More emphasis on recycling
- Current recycling rate is 67%; goal is 85% (by 2025)
- Ordinance needed to revise Title 10

King County Solid Waste C&D Ordinance

- C&D industry stakeholders said they support a level playing field and enforcement
- Establishes C&D facility designation system
 - Facility agreements cover surcharge, liability, compliance
 - Periodic facility residuals assessment
- Bans C&D materials from being landfilled
- Increases enforcement

Job Site Permitting Ordinances

- Job sites are under the jurisdiction of the local construction permitting agency
- Regional Code Collaboration (RCC) effort working to develop standardized code/ordinance templates
- RCC C&D subcommittee working on C&D codes/ordinances

Regional Code Collaboration

Draft C&D Code Language

- Applies to all projects over 1000 sqft that require a building permit.
- Required (all): Waste diversion plan and waste diversion report
- Required (building removal and alterations): deconstruction and salvage self-assessment, statement of compliance with asbestos regulations
- Must use certified processing facilities
- Must use at least 2 bins at the jobsite
- Minimum diversion rates may be set by each jurisdiction
- Final certificate of occupancy issued after submission of waste diversion report



Project Management

How is C&D Commonly Managed at a Job Site?

- In a big pile
- Burned or buried
- All ground up
- Everything in one dumpster

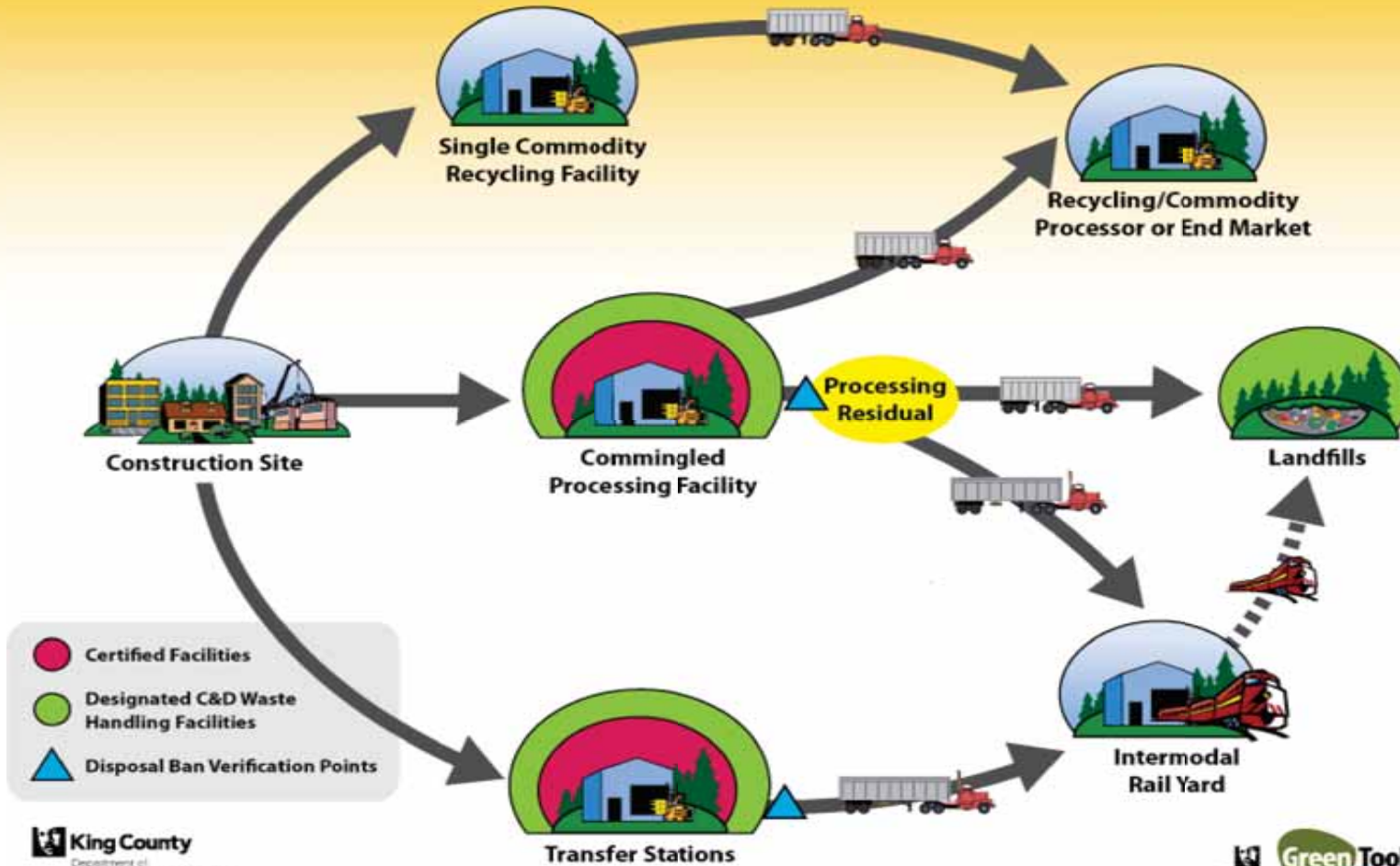
How Should C&D be Managed at a Job Site?

- At least 2 containers
 - waste
 - diversion/recycling
- Containers should be co-located
- Containers should be clearly labeled
- Closed securely during non-work hours
- Materials should be kept dry whenever possible

How Do C&D Materials Leave a Job Site?

- Self haul
- Independent hauler
- Hauler from processing facility

2015 King County Construction and Demolition Materials Management Proposal



Single Commodity Recycling Facilities



Commingled Processing Facilities



Pick Lines



Pick Line Recyclables



Special Commodities



What Happens to C&D Materials that are Recycled?



What is Beneficial Use?



What Happens to C&D Materials that are Handled as Waste?



So how do we make sure materials of value are diverted from the waste stream?

Be Clear About Your C&D Expectations



Include C&D in Your Contracts

- Don't leave the handling of C&D to chance
- Specify a target diversion rate
- Incorporate incentives/requirements for meeting target diversion rate
- Include guidance on which C&D materials may have recycling or reuse value
- Emphasize C&D at pre-bid and pre-mobilization meetings
- Require material diversion plan and report and use of a 3rd party certified processing facility

Make It Simple

Tools to Provide to Contractors

- Material diversion plan and report forms
- Cost calculation form
- Salvage/deconstruction assessment report
- C&D container signage

Simplified C&D Tracking

King County Green Building Ordinance Sustainable Infrastructure Scorecard:

- 30% C&D Diversion Plan
- Complete – C&D Diversion Report

Green Halo



greenhalo
S Y S T E M S

Recycling today's resources
for tomorrow's generations.

Instructions

Fill out the following Construction & Demolition Diversion Plan for all C&D projects at 30% design.
 Hover over cells that have **red comment triangles** in the upper right corner to view additional information and instructions.

Next to each potential waste material produced, select the appropriate check box to identify if the material will likely be diverted for "reuse on site", "salvage off site", "recycle source separated", "recycle commingled", or "disposal". Select more than one channel if appropriate.

Use the "Hauler" column to identify who will likely haul material to the receiving facility and the "Receiving Facility" column to select the location where materials will be hauled.

Construction & Demolition Diversion

Department: Fill in on project info tab

Division: Fill in on project info tab

Project Name: Fill in on project info tab

Project Number: Fill in on project info tab

Location: Fill in on project info tab

Project Manager: Fill in on project info tab

Material Type	N/A	Reuse on site	Salvage off site	Recycle Source Separated	Recycle Commingled	Disposal	Hauler (or identify "self")	Receiving Facility	Comments
Asphalt Paving *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Asphalt Shingles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Brick *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Carpet/padding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Concrete *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Cardboard *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Gypsum/Drywall **	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Land Clearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Metals *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Plastics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Plastic Film Wrap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Rock/Gravel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Soil/Sand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Hazardous Waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Commingled Recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Garbage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Totals:		0	0	0	0	0	Total Applicable Materials:	18	

* May not be taken for disposal within the City of Seattle

** Clean gypsum may not be taken for disposal within the City of Seattle

Instructions

Please complete this report for your construction or demolition project prior to Final Inspection Approval from the applicable permitting department.

Hover over cells that have **red comment triangles** in the upper right corner to view additional information and instructions.

Construction & Demolition Diversion Report

Department: Fill in on project info tab

Division: Fill in on project info tab

Project Name: Fill in on project info tab

Project Number: Fill in on project info tab

Location: Fill in on project info tab

Project Manager: Fill in on project info tab

Asbestos Abatement Performed?:

Square Footage: Fill in on project info tab

Diversion Records:

1	Material Type	Diversion Method	Quantity:	Unit of Measure:	Hauler:	Receiving Facility:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	If "Other" specify Material Type:	If "Other" specify Diversion Method:			If "Other" specify Hauler:	If "Other" specify Receiving Facility:
	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>
2	Material Type	Diversion Method	Quantity:	Unit of Measure:	Hauler:	Receiving Facility:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	If Other Material Type:	If Other Diversion Method:			If Other Hauler:	If Other Receiving Facility:
	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>
3	Material Type	Diversion Method	Quantity:	Unit of Measure:	Hauler:	Receiving Facility:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	If Other Material Type:	If Other Diversion Method:			If Other Hauler:	If Other Receiving Facility:
	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>
4	Material Type	Diversion Method	Quantity:	Unit of Measure:	Hauler:	Receiving Facility:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	If Other Material Type:	If Other Diversion Method:			If Other Hauler:	If Other Receiving Facility:
	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>
5	Material Type	Diversion Method	Quantity:	Unit of Measure:	Hauler:	Receiving Facility:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	If Other Material Type:	If Other Diversion Method:			If Other Hauler:	If Other Receiving Facility:
	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>

Check Compliance While Course Correction Is Still Possible

Verify the C&D Process Early

- Is C&D going to appropriate facilities?
- Are there at least two containers?
- Are tip receipts provided which clearly state which material stream loads are going into?
- Is someone checking containers daily on-site?
- Is container signage present and understandable by job site workers?

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