Facilities Needed for Zero Waste Community Planning

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Two key questions :

- What are we supposed to build?
- Where is the money going to come from to build it all?

“The Big Six” facilities EVERY community needs to build

- The MRF ... (materials recovery facility)
- The CHARM ... (Center for Hard To Recycle Materials)
- The Composting Facility
- The Re-Use Facilities
- The C & D Facilities ... (construction and demolition debris)
- The Residue Facility

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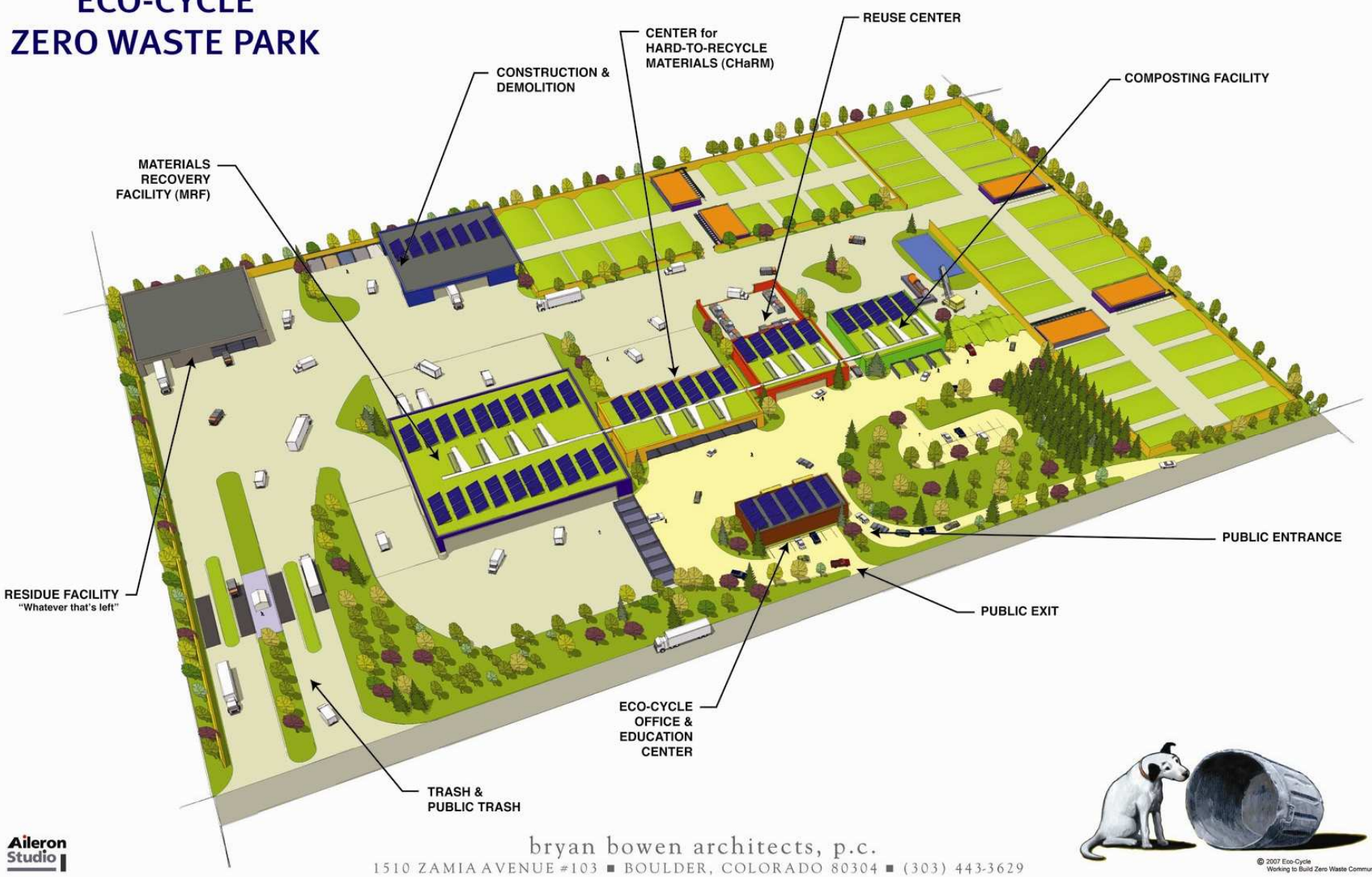
ZERO WASTE PARK



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The MRF

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The MRF

- For traditional recyclables
- At a minimum, needs to be dual-stream (fibers and containers);
- New mechanical sorting technology is making “single stream” possible;
- The future may be a “2-sort World”… biodegradables and dry sortables.

The MRF …
it's a collection cost issue

- MRF's make a profit … the market value of materials now $130/ton (Feb.'08). The processing costs are $45-$65/ton.
- Key issue is: how to create a large clean stream of recyclable materials to the facility?
- The Canadian approach (Ontario) = packaging industry pays 50% of the household collection cost.

The CHARM

(Center for Hard to Recycle Materials)

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- For “non-traditional” recyclables
- Items include the hard stuff: e-scrap, TV’s, books, junk plastics, Styrofoam, plastic bags, non-container glass, etc;
- End-use marketing will include re-use, recycling, disassembly-for-recycling.

The CHARM ... industry needs to pay.

- First one in USA is in Boulder = designed and funded by Eco-Cycle. The City pays 1/3 program operating costs
- Public pays fees to recycle some items such as electronic scrap (computers) and TV's;
- Vision for the future = British Columbia "producer responsibility organization" (PRO) system. Local industry "take back" laws so they organize themselves to fund and support a local CHARM facility.

The Composting Facility

The Composting Facility

- Source-separated organics (SSO) only!
- Items include food scraps, soiled paper, yard waste and bioplastics;
- Three primary technologies all work… but how much land and money do you have?
  - Open Windrows … simple and least expensive;
  - ASP (Aerated Static Piles) … windrows with active air and moisture management;
  - Anaerobic Digester … complex and most expensive

Composting Facility ... making more money every day.

- Is slowly becoming a self-sustaining business as America wakes up to the value of healthy soils and dangers of burying biodegradable materials;
- Key issue = creating a large clean stream of SSO material;
- “New Rules” needed to create a Clean Stream … must stop the landfilling of biodegradable discards in the future!

The Re-Use Facilities

The Re-Use Facilities

- Diverse and customized
- UBM's – (Used Building Materials) can be a source of profits
- Local thrift store network … it exists and is working!

Re-Use Facilities ... making money and growing

- The “used building materials” (UBM) business is profitable.
- “New Rules” needed requiring deconstruction.
- Thrift Stores are already an established network in most communities.

The C & D Facility

Construction and Demolition Facilities

- They aren’t the same!
- Construction Discards easily source-separated for marketing;
- Demolition Debris is mixed waste and expensive to process;
- Hand Deconstruction of buildings as the first step, then Demo after that.

C & D Facilities ...

- A break-even financial proposition?
- “New Rules” needed to drive good material to the facility;
- Public subsidy may be needed similar to support the CHARM will require.

The Residuals Facility

The Residue Screening Facility … after ZW, "whats left?"

- In a "Zero Waste – Or Darn Near" world, goal is to reduce mixed-waste to under 10%;
- This is a transfer facility (not yet invented) that will separate items sufficiently to identify their sources, and then a "community impact fee" will be sent to the producer;
- The mixed-waste needs to be "stabilized" to prevent the creation of methane, a dangerous GreenHouse Gas;
- The final inert material will be buried in a dry tomb landfill

Residuals Facility... very expensive, very profitable

- A “profoundly” high gate fee for mixed waste will create a financial disincentive to come here;
- Profits from here will support the other ZW facilities that need financial help, such as the ChaRM;

In closing ...

What do we do next?

3-Step-10-Year Bridge Strategy to creating a ZW Community:

- Getting to 70% … "easy", technology and economics known, need political will;
- 70 to 90% … requires upstream new rules and "producer responsibility"
- Over 90% … who knows? Let's have that discussion when we get there.

What to do with “mixed residuals” during the Bridge Timeline and after?

No easy answer here …

- Don’t invest a lot of money to deal with it
- Cheap and flexible… windrow compost it at landfill to “stabilize”?

Two Final Thoughts

- Big Idea #1 … There is enough money circulating in the current waste management industry to pay for the transition to a Resource Recovery Infrastructure. No extra money needed - only a shift in spending;
- Big Idea #2 … No new landfills or incinerators will be needed for at least 100 years (if ever) if we create a "ZW-Or Darn Near" resource management system.

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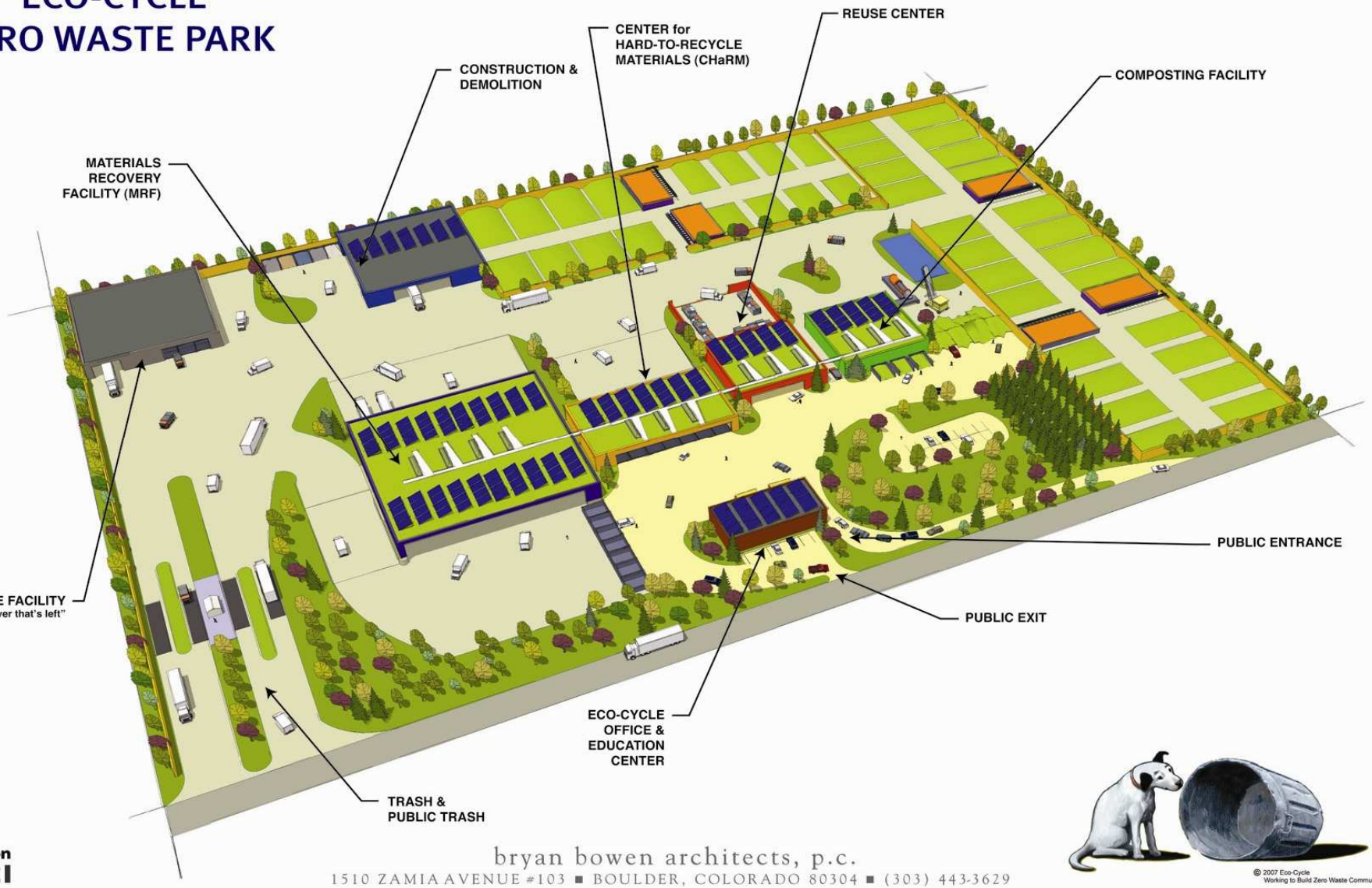

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