



HERITAGESM
SHINGLE RECYCLING

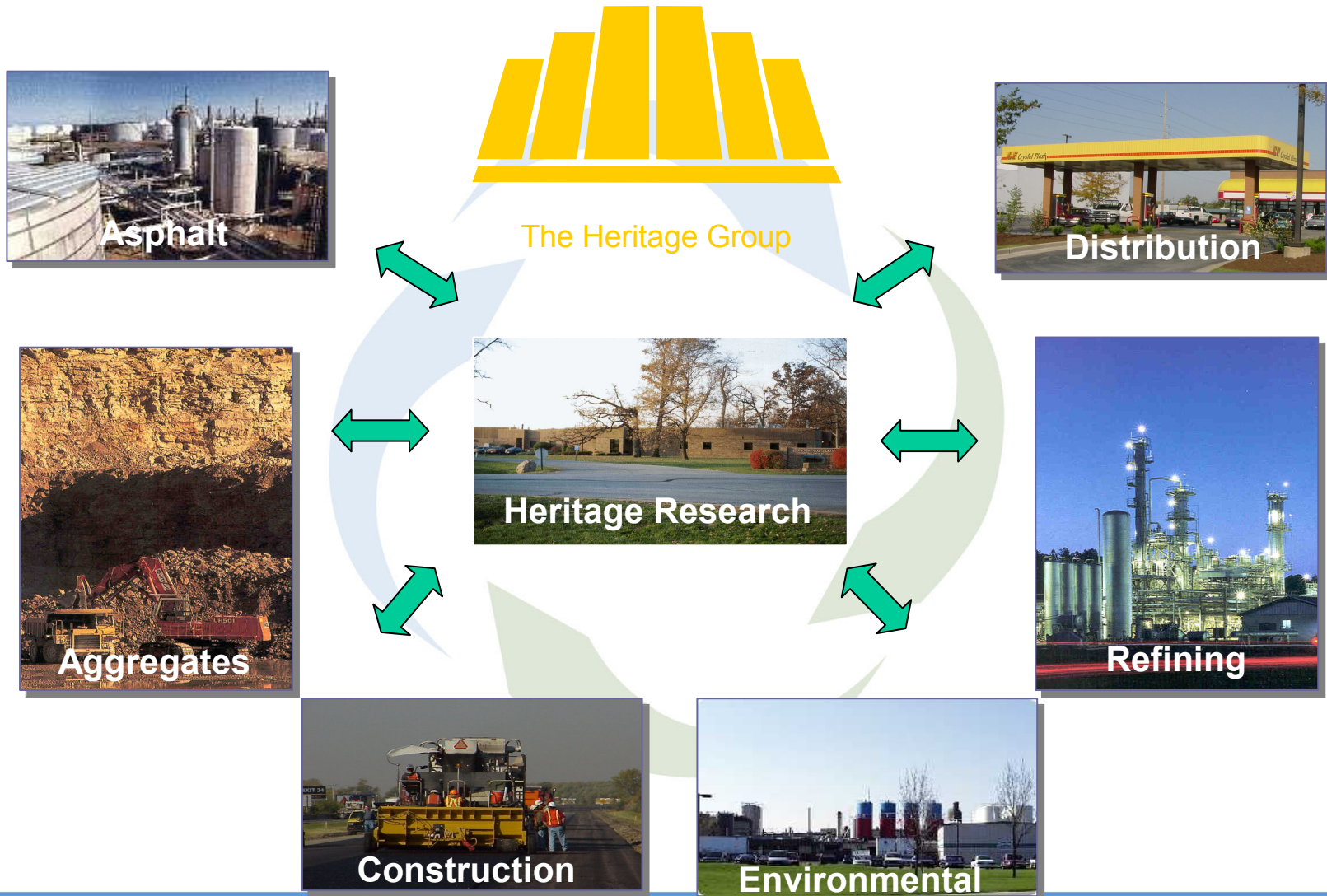
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October 26, 2001

5th Asphalt Shingle Recycling Forum

Heritage is...



Shingles 101

Landfills are overflowing with C & D

ENVIRO-FACTS

>10MM Tons Shingles Land Filled / Yr
(~66 lbs / person / yr)

Recycling (1) Ton of Shingles Saves:
~ 1 Barrel of Oil
or
28 Gallons of Gas

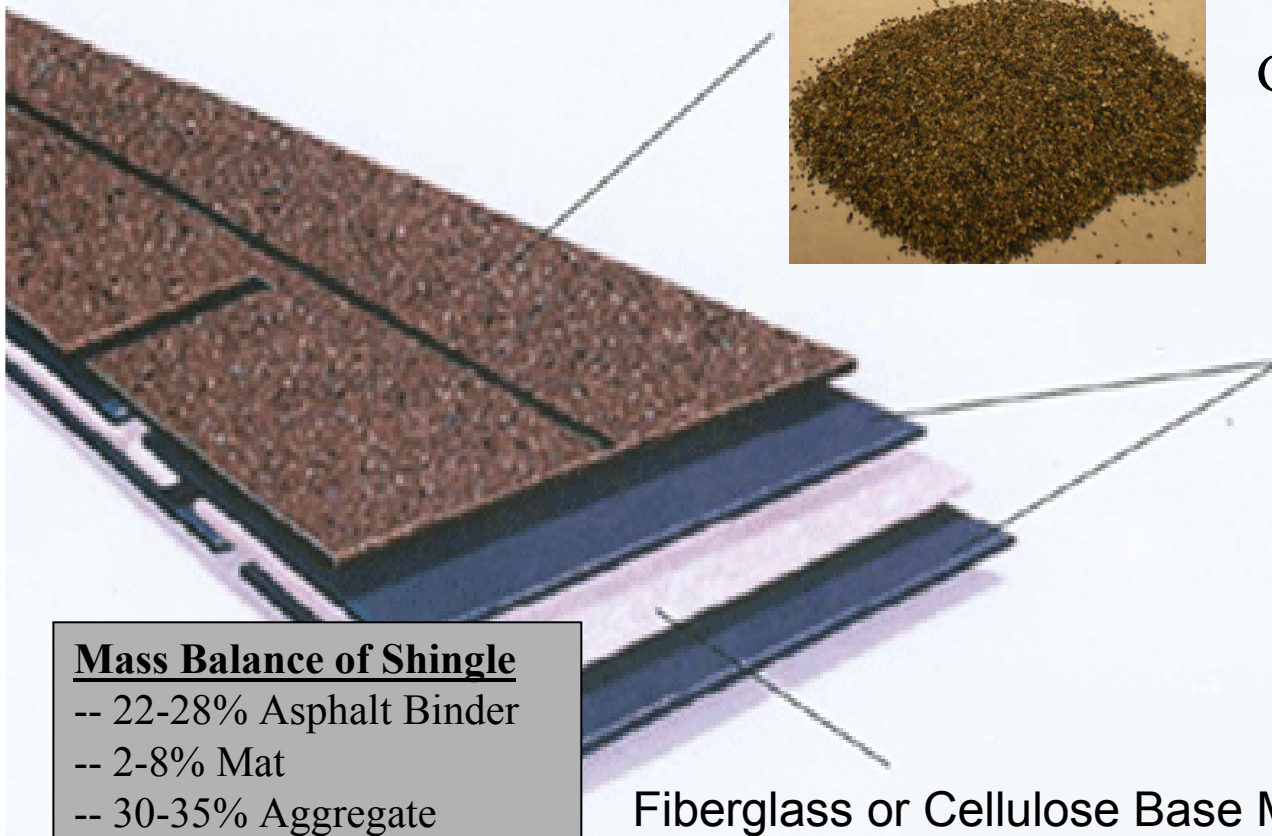
Replacing (1) Ton of Virgin Asphalt:
Reduces CO2 emissions by 54,000 Lbs

Shingles from a House Used 5% in a Mix:
Paves (50) feet of 2-lane Highway



Shingles 101

Shingles Contain Valuable Resources



Granules = Aggregate



1/2" – 3/8" Minus
Asphalt Chips

Mass Balance of Shingle

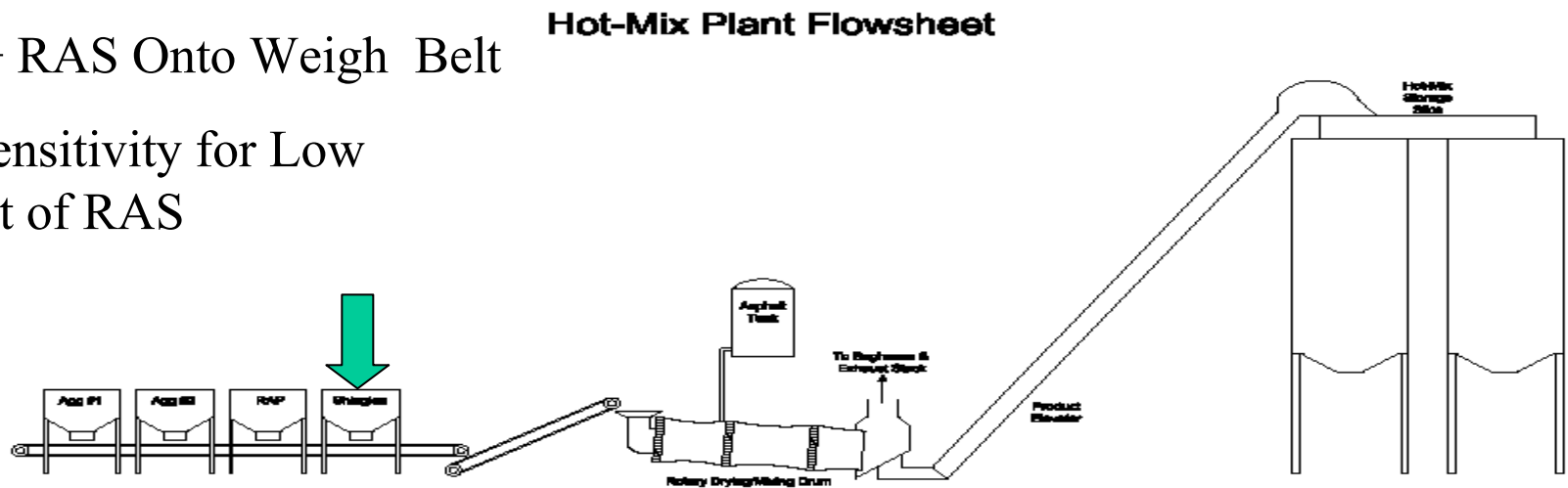
- 22-28% Asphalt Binder
- 2-8% Mat
- 30-35% Aggregate
- 35-45% Mineral Filler

Fiberglass or Cellulose Base Mat

RAS Introduction at HMA Plant

CONSIDERATIONS

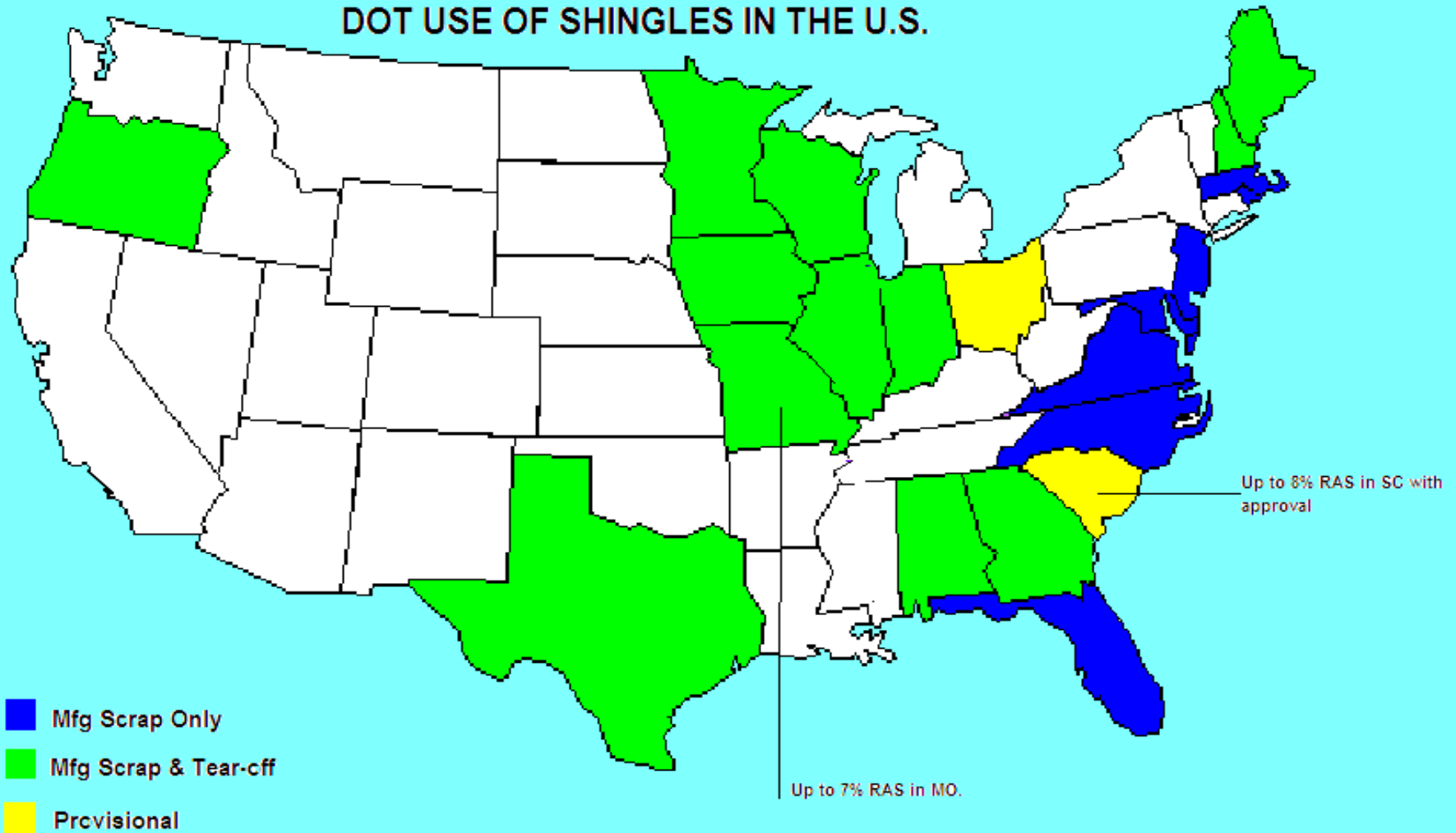
- Multiple Recycle Bins or Pre-mix with RAP
- Bin Permitting
- RAP + RAS Onto Weigh Belt
- Belt Sensitivity for Low Weight of RAS



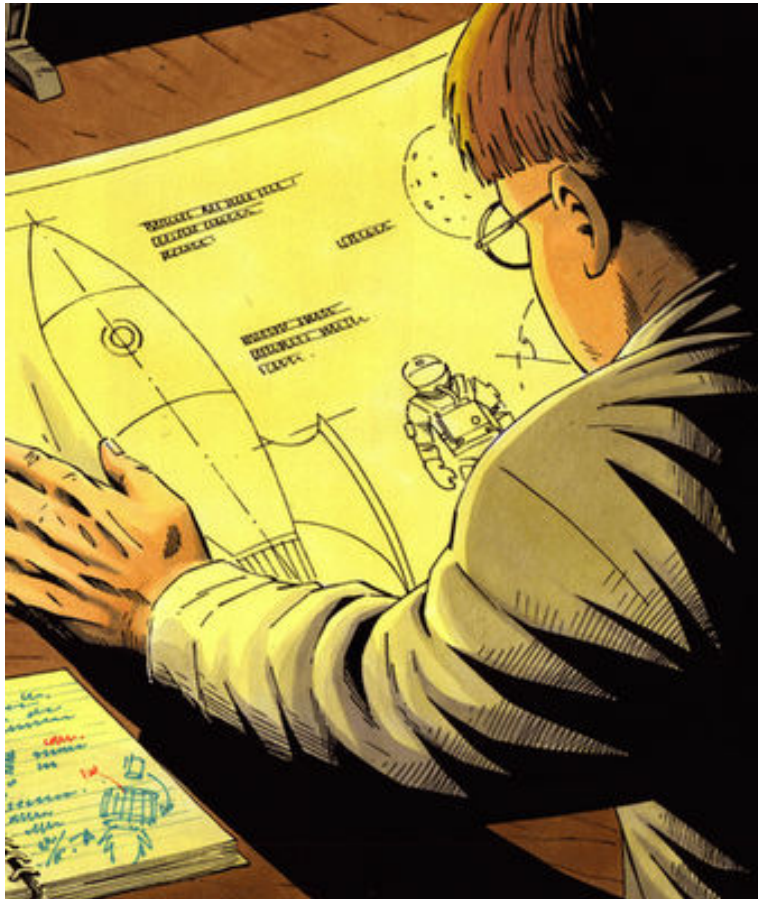
“Sweet Spot” = Maximized RAP + RAS in Addition

Shingles Use Around the U.S.

DOT USE OF SHINGLES IN THE U.S.



Blueprint for Sustainable Shingle Recycling Business



HOW DO WE VALUE RAS?

Percent Asphalt in RAS x Price of Virgin Liquid

...And, How Much AC from RAS Incorporates & Rejuvenates

Off-set for Cost of Soft Binder

Off-set Costs for Aggregate Changes in Mix

Off-set for Mix Design Costs

Supply & Demand Dynamics

...ON WITH THE SHOW



Thank You!