

Greening of roads in eThekweni

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19th Road Pavements Forum
Salt Rock, Durban
May 2010

Why green Durban?



We live here

Right thing to do

Logical

Cheaper

Efficient



Western Freeway







Green shoots in Durban



Partnerships with industry



Training and development



Changing documentation /
specification



Changing operations



Risk management as opposed to
aversion



Cradle to grave efficiencies of products
– moisture in crusher

Our major considerations



Optimizing budget spend

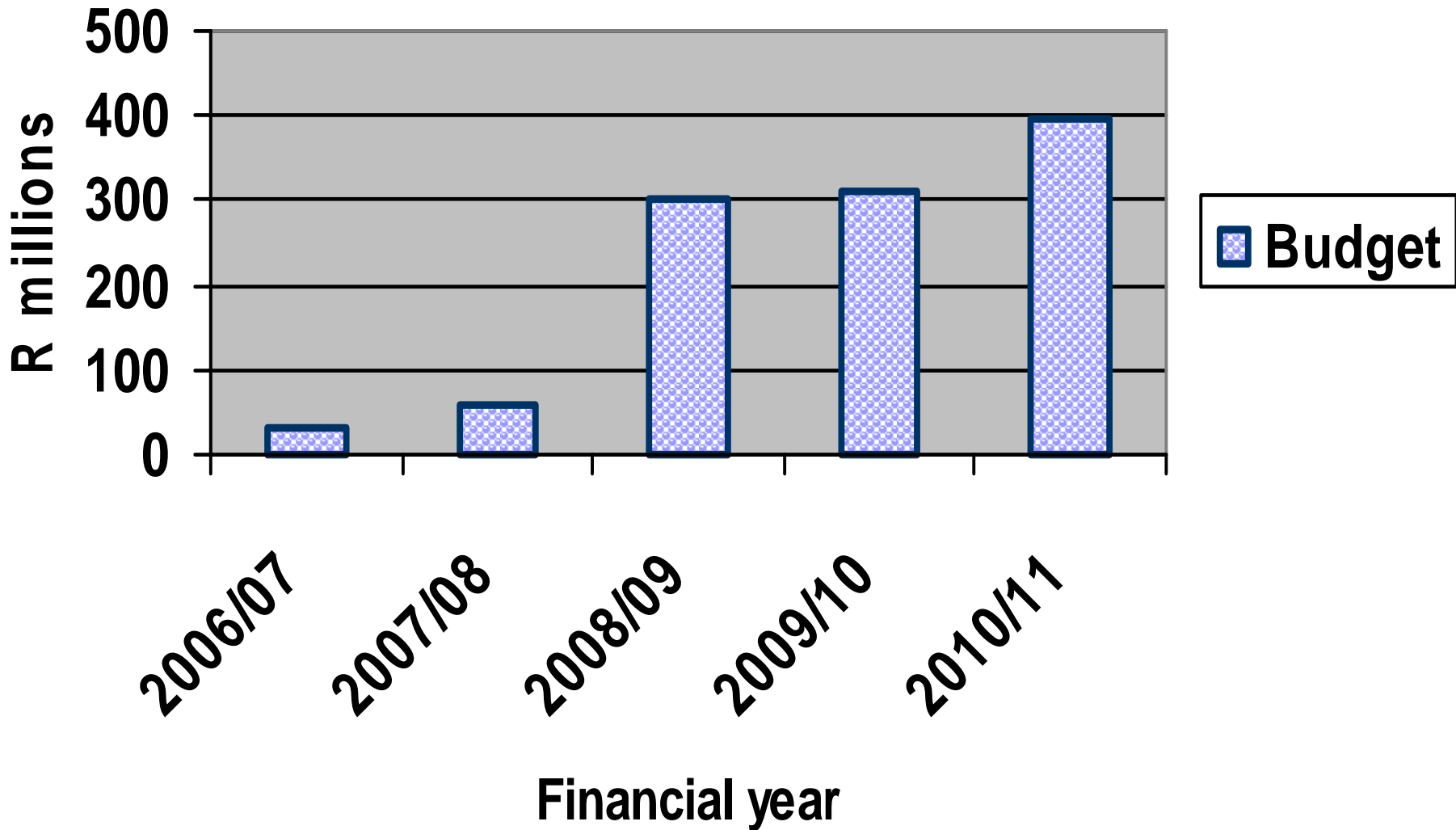


Lower energy pavements is forming the nucleus of our greening actions

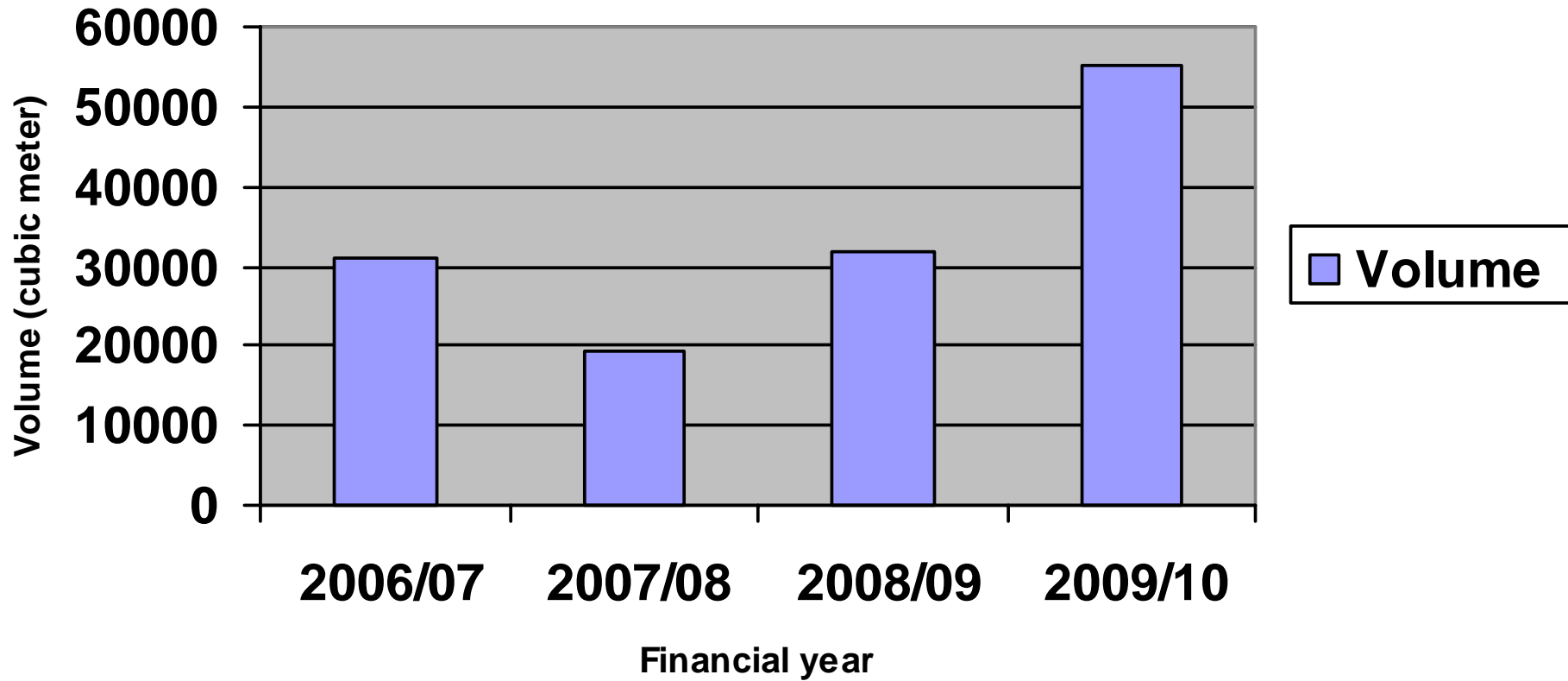


Longer life pavements

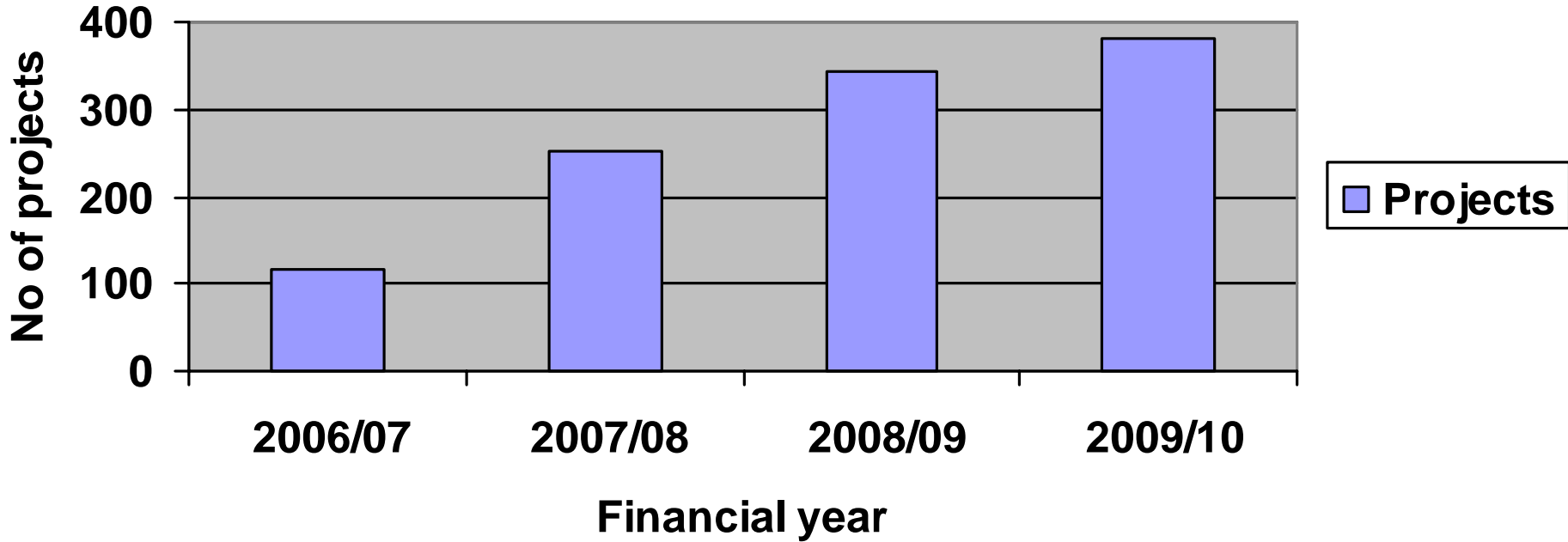
Road Rehabilitation Budget

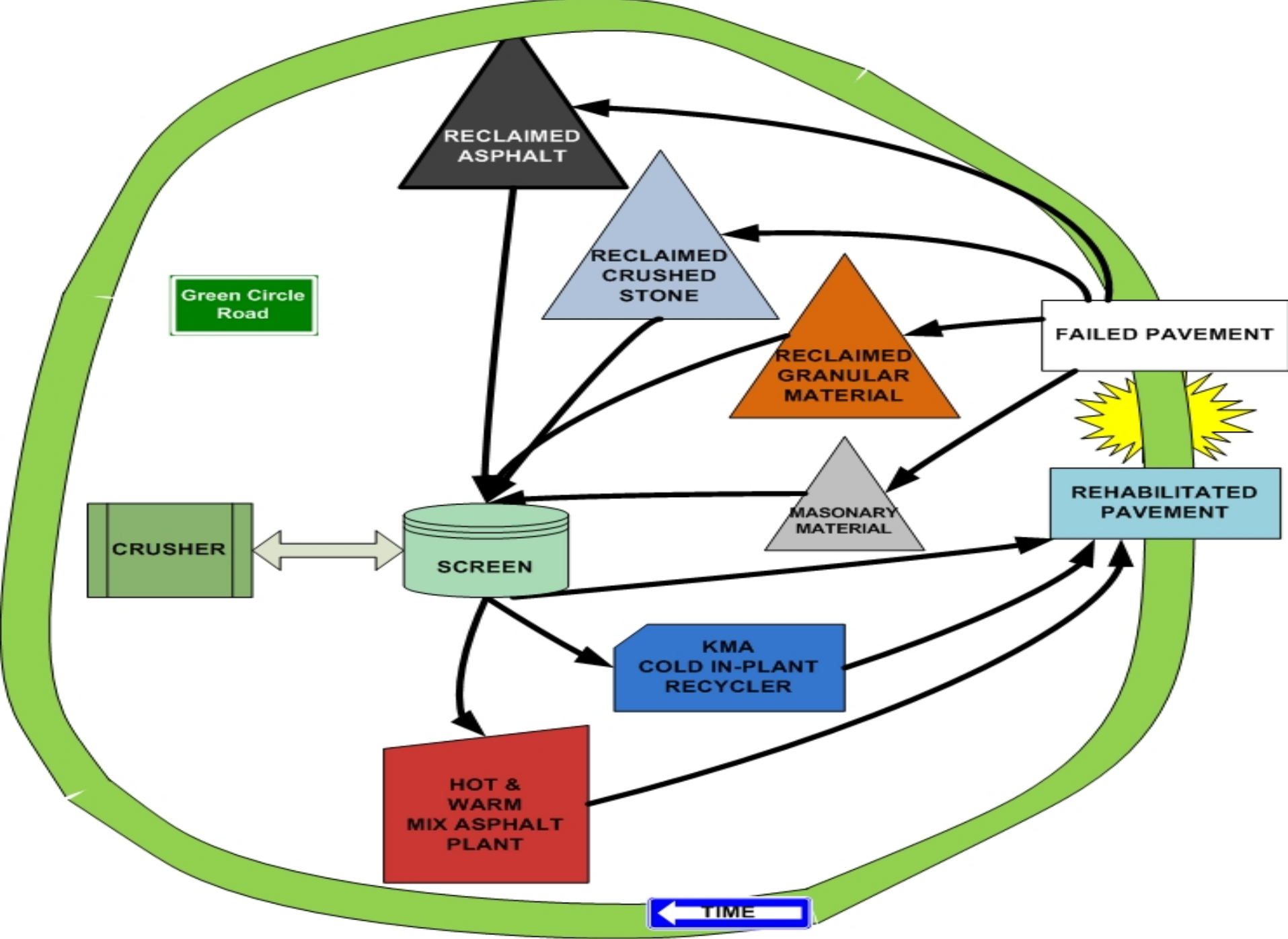


Reclaimed asphalt volumes



Number of projects completed per year







Simple on just one road



But over a 6000km network



Within 550 km² area



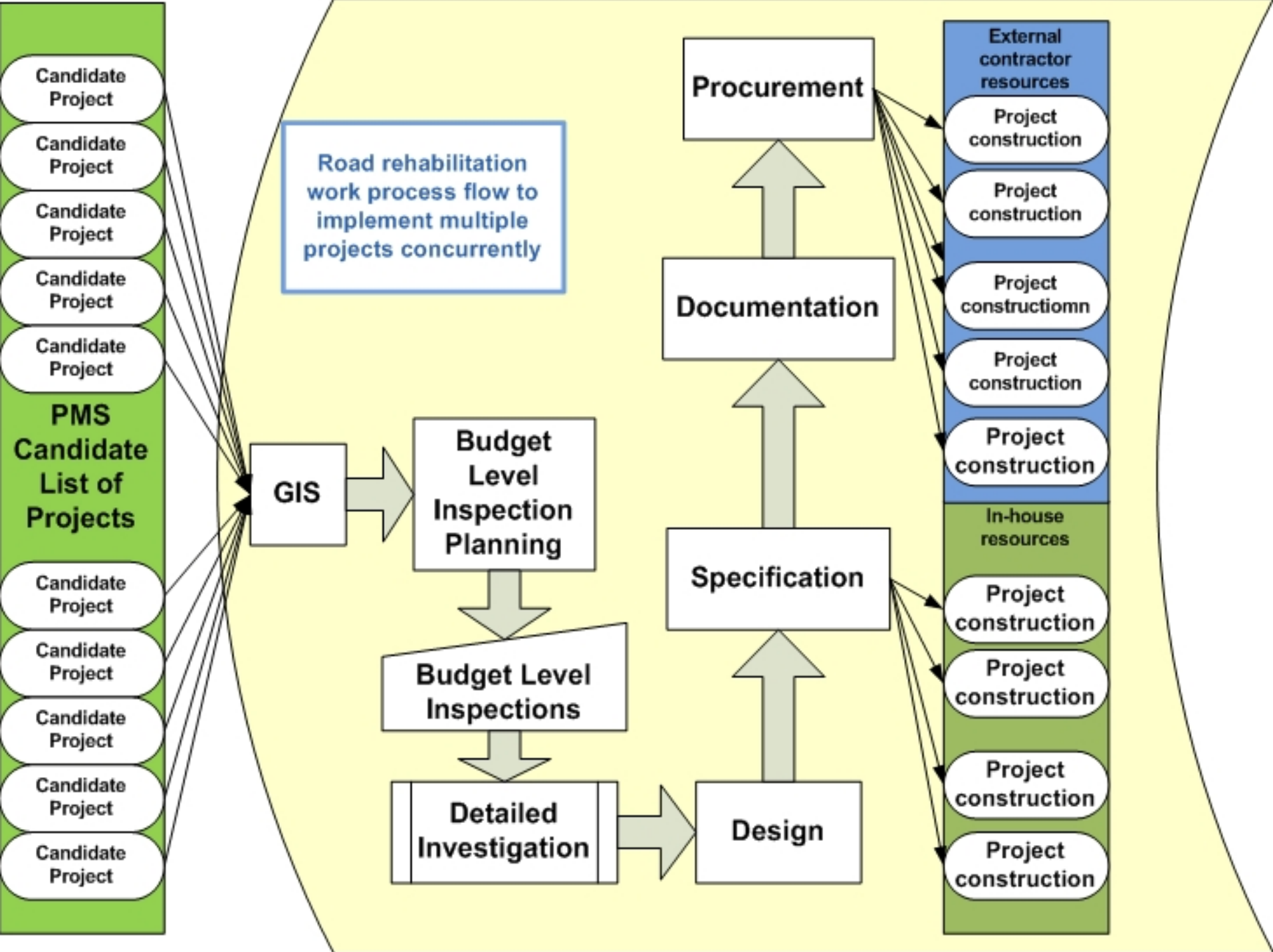
On 300 projects concurrently

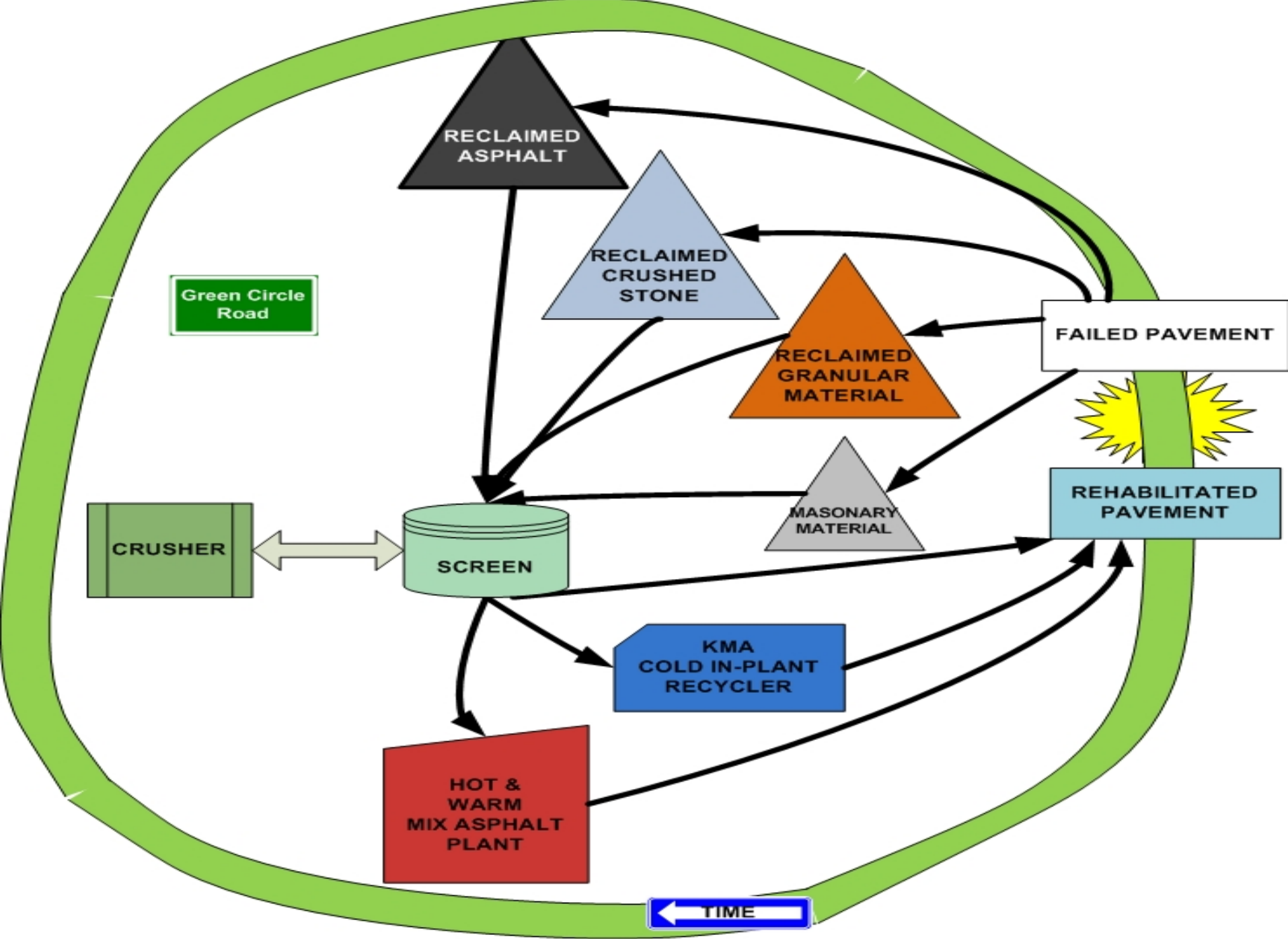


In 12 months



This is the opportunity!!!!!!!!!!!!






The client owns the road,
The client owns network,
The clients owns the material,
The client drives policy

It starts with the client!!!!!!!!!!!!!!



Redefining roles

 Selective excavation & selective stockpiling is a designed process & is specified by the pavement engineer

Material Management Plan

 Materials register

 Materials usage plan

 Reclamation plan

 Materials processing plan

 **Traffic management plan** – disruptions due to construction works eg C4 vs BSM

Lower energy pavements

 Cold-in-place recycling is now routine option

 Cold-in-plant recycling

 Emulsion stabilised RA

 Warm Mix Asphalt

 Crushed building rubble

 Crushed reclaimed road concrete

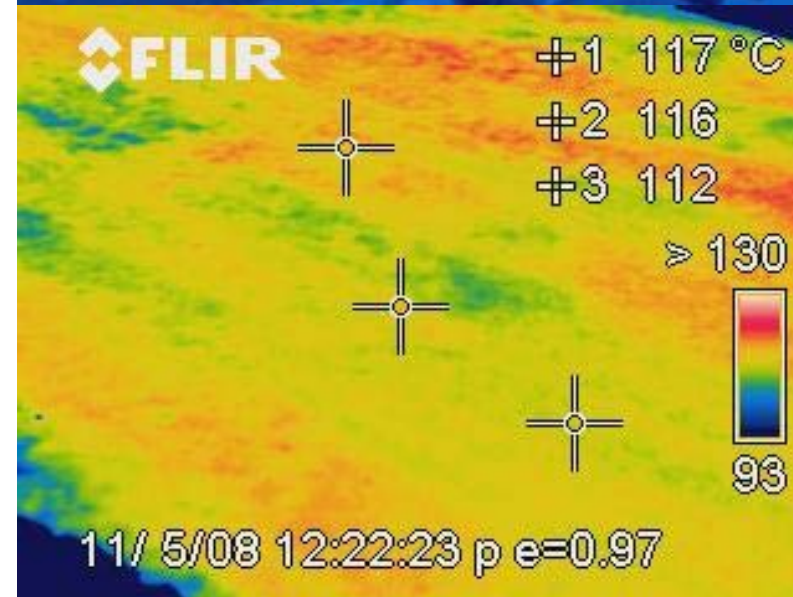
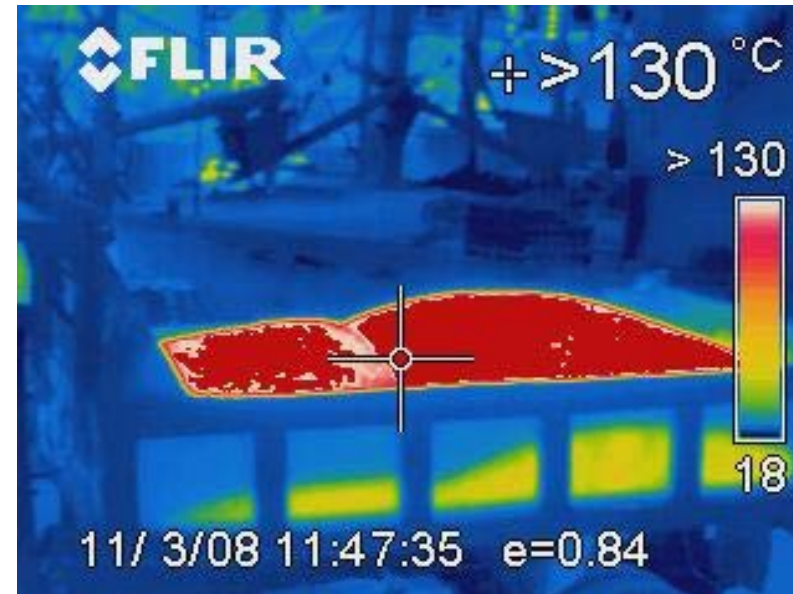
 Sewage sludge slag

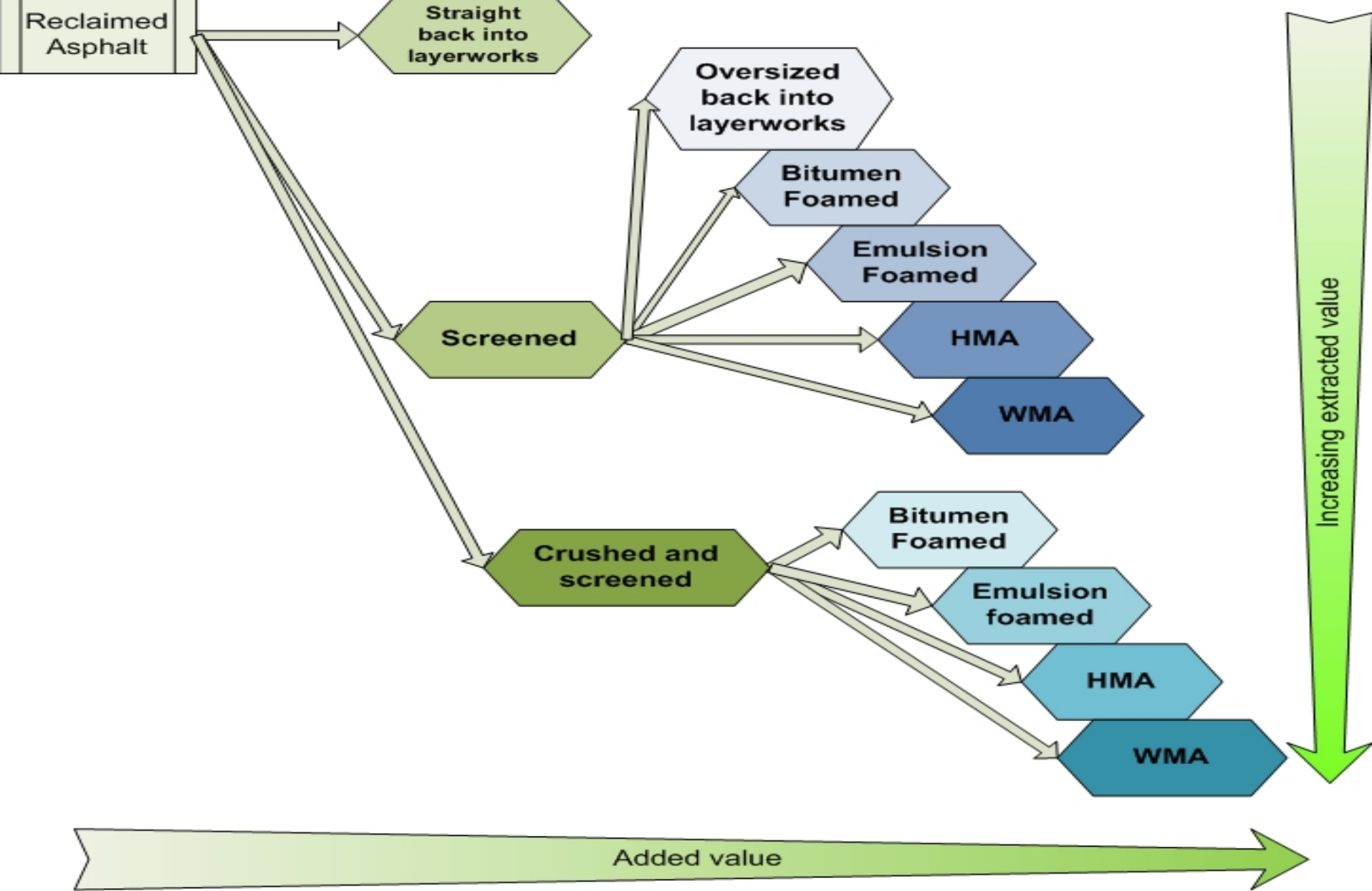
Lower energy pavements: Cold-in-plant recycling



Lower energy pavement: Warm Mix Asphalt

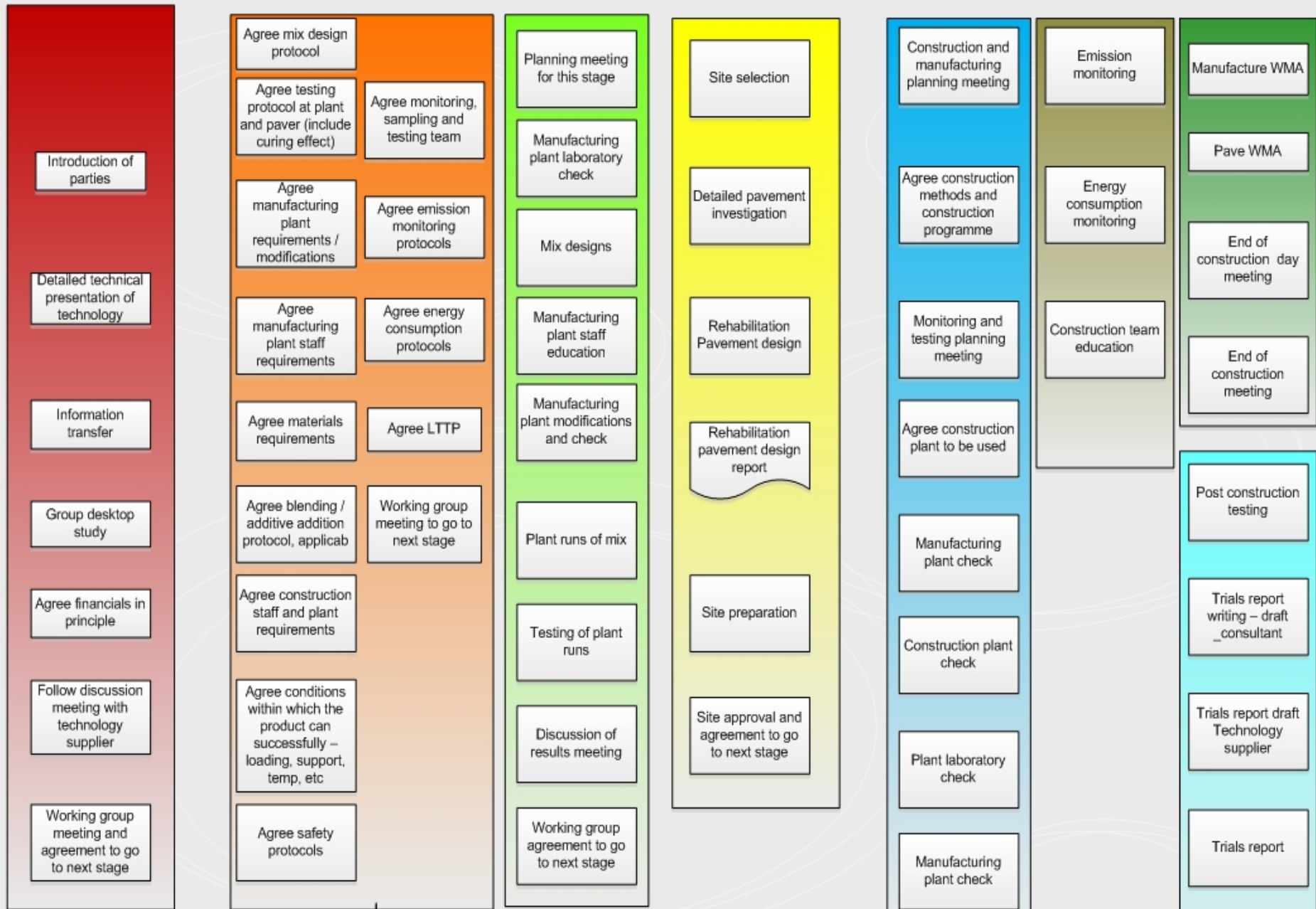
“asphalt that is manufactured and paved at between 20°C and 30°C lower than conventional hot mix asphalt (HMA), with all its properties and performance being equal to or better than HMA “





Getting the most from your RA

Not to scale



WMA Trials Template

April 2009

SA's **WMA** trials


 Brackenhill - SASOBIT


 Leicester Road – SASOBIT & Rediset WMX

 Present trials – SASOBIT, Rediset, NA Foamtec
(National Asphalt, Durban)

 Astec Double Barrel Green (Much Asphalt)

Present **WMA** trial

 SASOBIT, Rediset, NA Foamtec (National Asphalt, Durban)

 Higher % RA in mix

 Lower temperatures - 30°C

 Pmb WMA

 WMA Handwork -workability

 WMA Guideline to be published

 Recycle-ability of WMA ?

 Engineering properties of paved WMA?

ASPHALT IS 100% RECYCLE-ABLE

% VIRGIN AGG SUBSTITUTED WITH RA	% BINDER RECOVERED
10	0,3
20	0,8
30	1,4

Industry response

 In talks with rejuvenator supplier on using 40 % to 70% RA.

 National Asphalt produced a briquette with 100% RA.

Lower energy pavement:

Reclaimed Masonry Materials

 Concrete from roadways

 Rubble from demolished buildings

 **NOT TO THE LANDFILL SITE**

 Have used as G5



Other materials opportunities



Asphalt Manufacturing

- Moisture
 - Quarried materials – Crusher dust
 - Stockpiled - reclaimed asphalt



Sewage sludge slag

Manufacturing & processing plants



Mechanical efficiency of asphalt manufacturing plants?



Guideline for crushing reclaimed material?



Guideline for screening material?

Construction plant

 Oscillation compaction

 Compaction management software






 Reduced mass of truck bins – aluminum

 Terminal compaction

 Should we have standards for transportation?

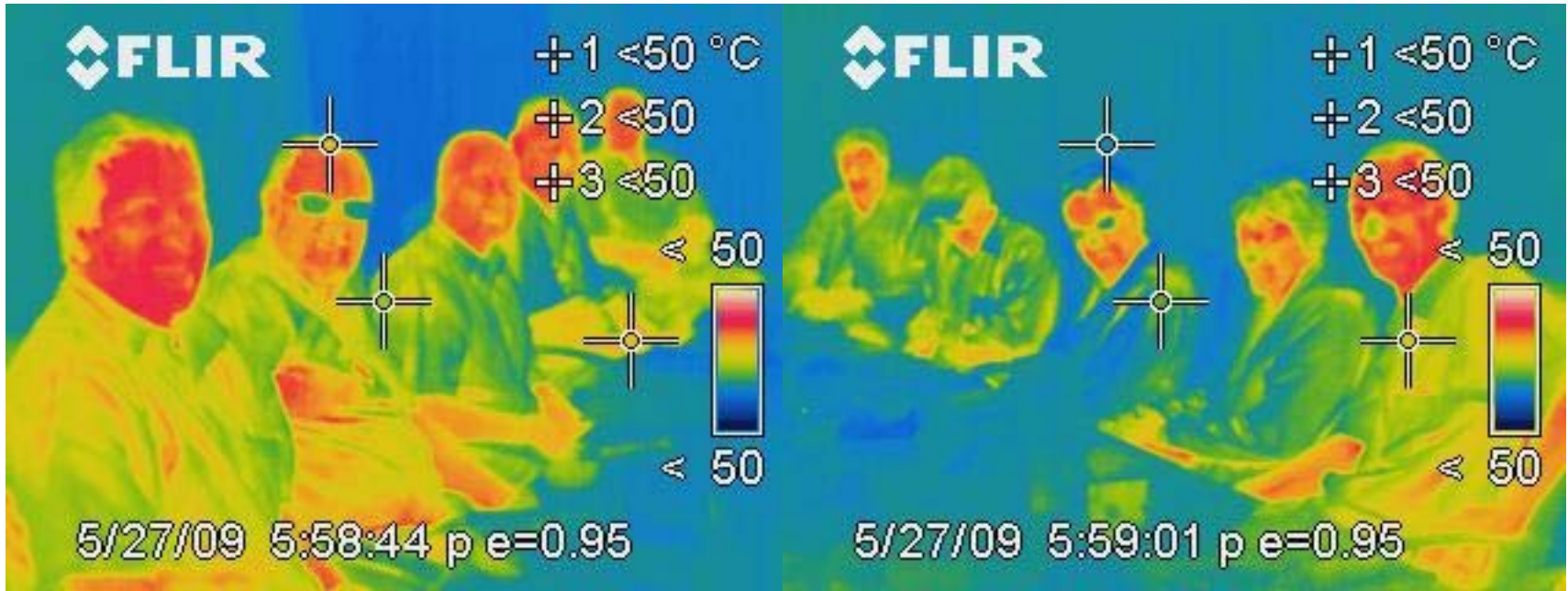
 Should we have guideline for milling?

Training and skills development

-  Quality pavement = longer lasting pavement.
-  Longer lasting pavement = less energy consumed.
-  Skilled people build quality pavements.
-  Focus of NQF 1 to 4.
-  Training the bulk of the people who make up our construction sector.

Check you our WMA project report at

www.sabita.co.za



Thank you



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