Workshop group 3

11/15/2017

Communication Part

Q.20

By Thomas C.Baird:

The information is developing and on its way.

Lack of adopting of local material on design. Less tacks in each area. Slower in concrete;

A lot of information for asphalt there. No failure on permeable asphalt pavement(in the case of 10% truck traffic; not high speed)

For coarse asphalt : we have clear information about the full depth system (including the base and asphalt overlay); for concrete : we only have 50%;temperature change in replacement

Common Asphalt failure:

(1)Asphalt content goes to design;

(2)structure failure(compression, confinement in basement, aggregate gradation during storm)

(3)improper use of geotextile:

(4)Improper soils (solution: design the corresponding system for different types of soils :e.g. under-drainage, wells under the asphalt layer to pump the water out; treatment of soil: mixture of concrete with soil)

(5)installation issue

Communication Part

- Q.16:Information from different groups and how to get access to them

- Local agent; pavement engineer; regional designer; developers
- Different groups should be on the same page saying the same thing at different levels;
- Pavement side: we have the info about pavement but not the environmental side; but for environment side: have the storm info but no pavement side info
- Suggestion: Waterboard(but where did the decision maker get the information to be certain about the decisions); sample project; technical documents showing the tests and research that have been done; Come up the courses (manuals) and apply to different levels; recommend a special committee/organization that can establish sth like SHRP; collect information and develop training courses based on that; we are now missing the storm water side information; come up a umbrella Champaign to sum all the information ; We need a roadmap (bring together all the experts from different sides: environmental side, pavement side , agency)

Planning and development codes

- 70: 75
- the lack of information like specs about permeable pavement (no local laws), no local codes.

We have the landscape treatment code is not good enough(TB suggestion: use it as a pretreatment, like in a parking lot); reword current landscape code to storm treatment code; (different types of soils formula to make a map to identify different area suitable for permeable pavement, would the agency have that information(they do but in project scale), but to sum all the information to a map); physical constraints in the map (not just the soil part also the utilities part)

- Suggestion from Caltrains: limitation of 10 feet from the bottom to watertable

Asset Management

- Recorded by the county (have the data, how to adopt, where to go and maintenance)
- For non-permeable pavement (have the ID and map),for permeable pavement maintenance(difficult ; currently by PM);how to mark the permeable pavement?
- We have label for pre-cast concrete
- Not graded according to storm water
- Suggestion: GIS all the location and map, trace back to source (where the failure part is)(preactive)
- But how to locate the permeable pavement?
- Permeable pavement information connected with the normal pavement ?
- Suggestion: we need a checklist (specs) for maintenance management
- Communication during maintenance (plan process; pilot project involving everyone)
- Marking the permeable pavement: mark on the curb; special reflector; how to cooperate with the maintenance side
- Caltrains: the maintenance of sign; BMP; painting; reflective markers; the size of sign and safety issue; map into the GIS (good for maintenance and be able to know the place)

Designing for additional benefits and impacts

- Q.45:
- THE RATIO OF IMPERVIOUS TOPERVIOUS SURFACES: calculated based on how much air void in the pavement ; the storm rate/volume; porous stone with conventional design part; control the detention; what you are designing on and what's risk of future case and mitigate that situation;
- For flow management ,we have the concept right now, we focus on this part basically;
- For water quality: we don't have adequate planning; State of Maryland for storm water; incorporate the reservoir treatment to do the water quality control. Like a *sandwich(*different levels for different functions, like the pollutant filter)
- The experience and tests/information are there, we need to put them under the umbrella group to bring them together. Involvement the participants from different parts/resources(pavement, storm water). Precast has its own system;
- Maria suggestion: pavement agencies certified business/manufacture based on performance; state approved tests/materials (list of performance approve system) ; Manufacturer representatives on site (supply control)(we have that in the precast concrete);
- Why do we need a certification: we need a specific supplier of paving/contractor/; even though they have a certification, sometime we need the real work done to see they are qualified.
- For concrete, we have certified contractor (just the layer) but for asphalt, we have many experienced contractor but no certified contractor
- Developer:
- Caltrain: we are doing the performance based specification for permeable pavement ; don't specify means, just the critera ; need the designer engineering;
- Construction part : how to construct that based on the design
- Performance criteria:NEW YORK State DOT has it

Q5

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- We don’t have the modelling done for this situation; and we don’t need it as long as the we have less trucks; if we have enough distance to the watertable; the need of modeling for the risk of controlling 10 feet from the bottom to watertable to control the water flow;

Maintenance

- Maintenance: involve the people from maintenance on the site; the communication part; Vacuum and sweep
- Come up the money and equipment to help the maintenance management.
- Most pavement companies in NY have the vacuum system equipment
- Buy the equipment, call the contractor to vacuum the pavement 3 to 4 times year
- Do it off the peak
- Training the drivers to use the vacuum truck to slow down
- The soil maintenance and the top layer maintenance; we also take the LCA into account for the maintenance;
- (permeable pavement welcomes cracks and utility cutting.)
- Uniform the products, process and material from local;
- Bring the maintenance to the planning table/process;
- Different segments for maintenance (normal sections vs permeable sections): provide the maintenance the contractor with the design; update the permit every 5 years for local county
- Caltrains: permit includes the guidance; the maintenance has the access to information they need.
- Innovation: Vacuum (it’s design offsite protection; maintain vegetated areas; 2-3 times /year; deep clean promptly if accident occurs); use of Geotexitles(non-moving)

61.Whose asset is it?

- Maria suggestion: partially funding maintenance stuff (1-2) deliciated to stormwater maintenance (transit to the entire system); currently we don't have that part for permeable pavement;
- Education of different agencies to realize the importance of maintenance;

Life time for permeable project:

- 20-25 years for the coarse asphalt pavement;
- It depends on different cases when it comes to the stormwater (different size pipe design, the cost is cheap compared with aggregates)

10.The criteria for permeable pavement design?

Caltrains: We have the design tables ; design technology/methodology; test sections; full scale experiment(Shadi); not be able to apply it right now;