

MANAGING STORMWATER FOR THE IMPROVED RESILIENCY OF ROADWAYS AND DRAINAGE SYSTEMS



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WEATHER PATTERNS.....



- *Change storm Impacts:*
 - *more intense*
 - *heavier short rainfall*

100-Year 24-Hour Rainfall (inches)

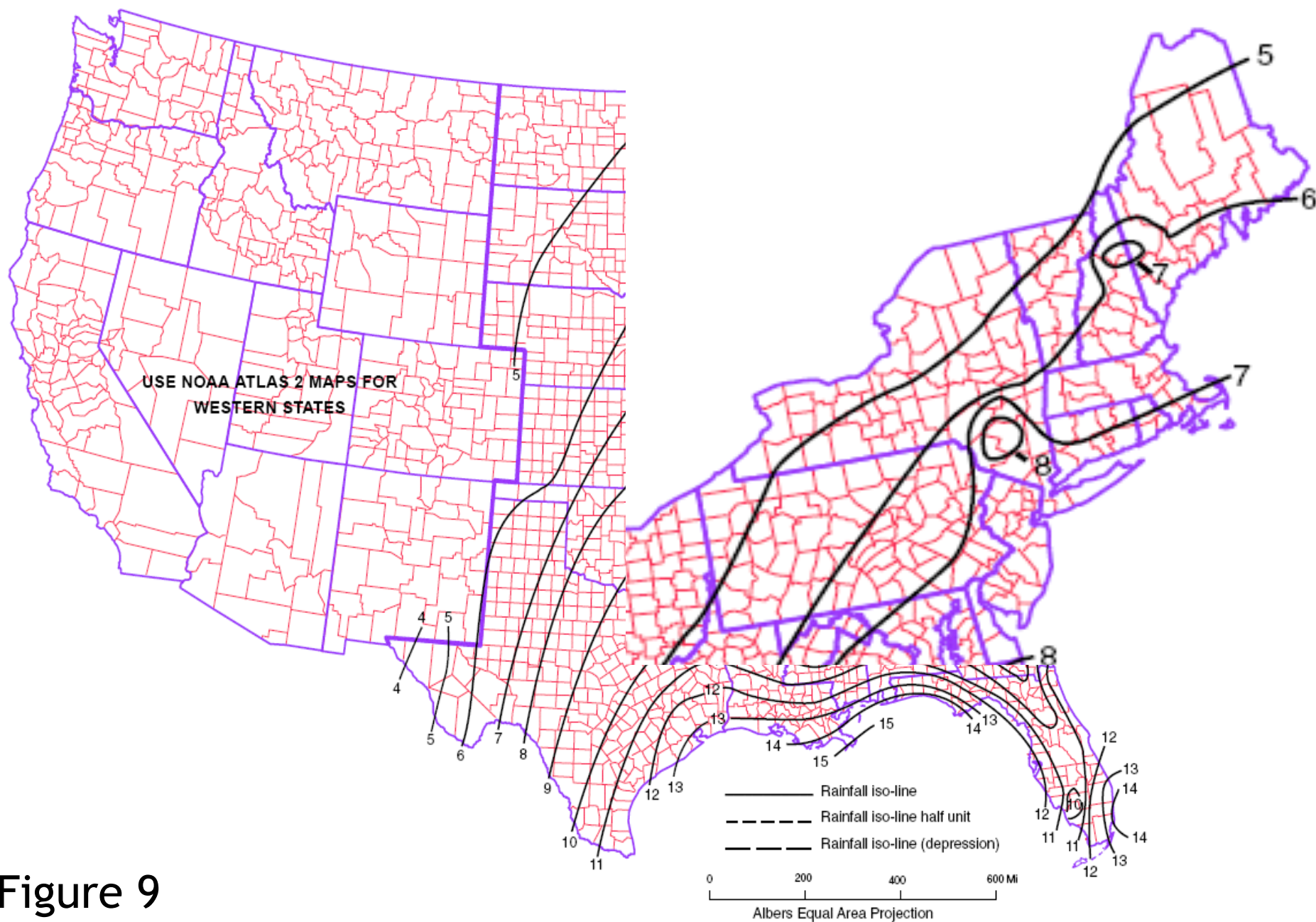
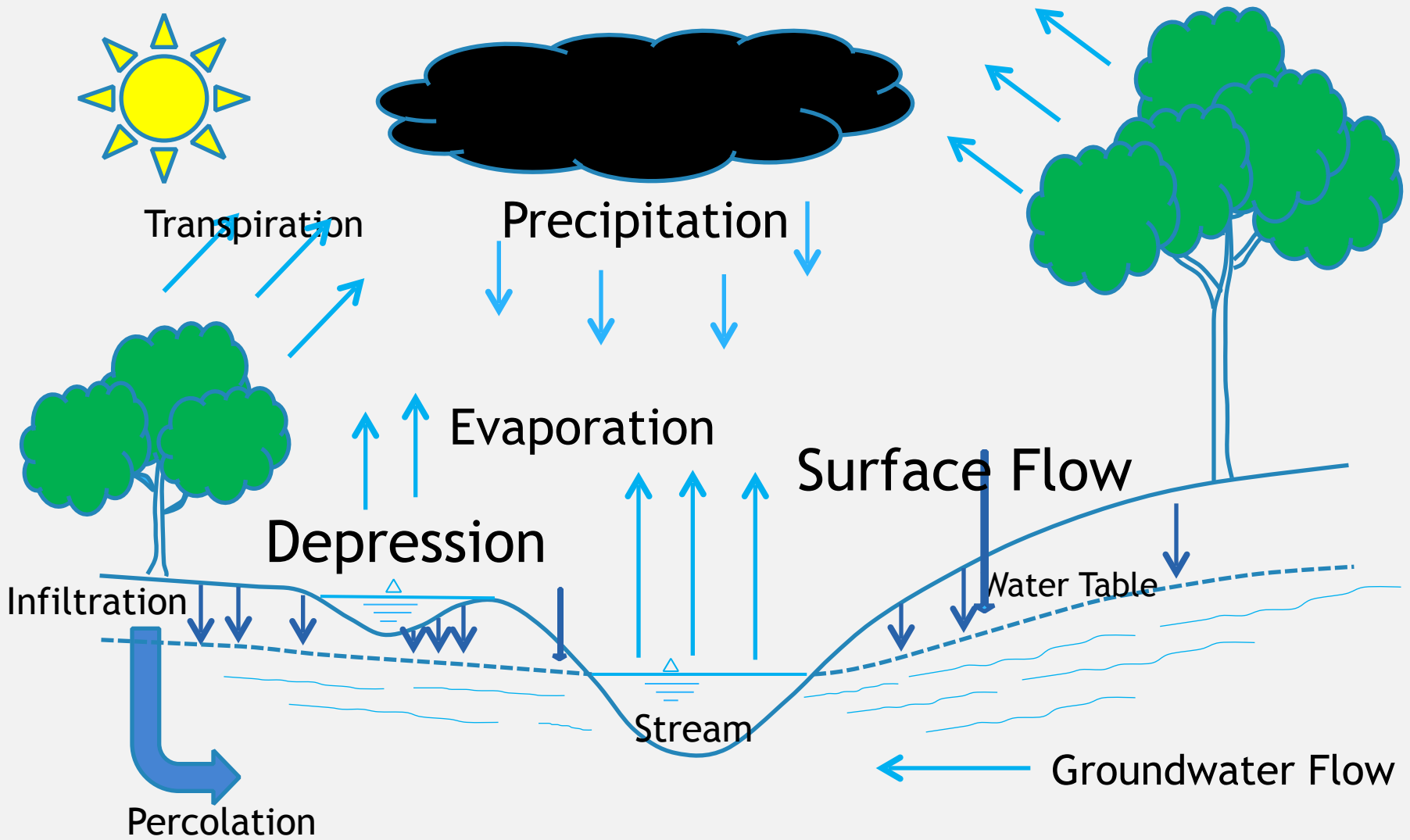


Figure 9



Water Cycle

LAND USE



DRAINAGE TYPES



HIGHWAY DRAINAGE PROBLEMS

Excess Flow
Sedimentation
Poor Culvert Condition

High Velocity
Perpendicular Flow



EXCESS FLOW



OVER TOPPING



HIGH VELOCITY



SEDIMENTATION



PERPENDICULAR FLOWS



POOR CULVERT CONDITION



WHAT CAN BE DONE?

Inspections

Reduce Volume

Reduce Velocity

Stabilize



INSPECTIONS





DIVERSION

- *Reduce Volume*



DIVERSION :



STORAGE:

Retention/Detention Ponds/Wetlands

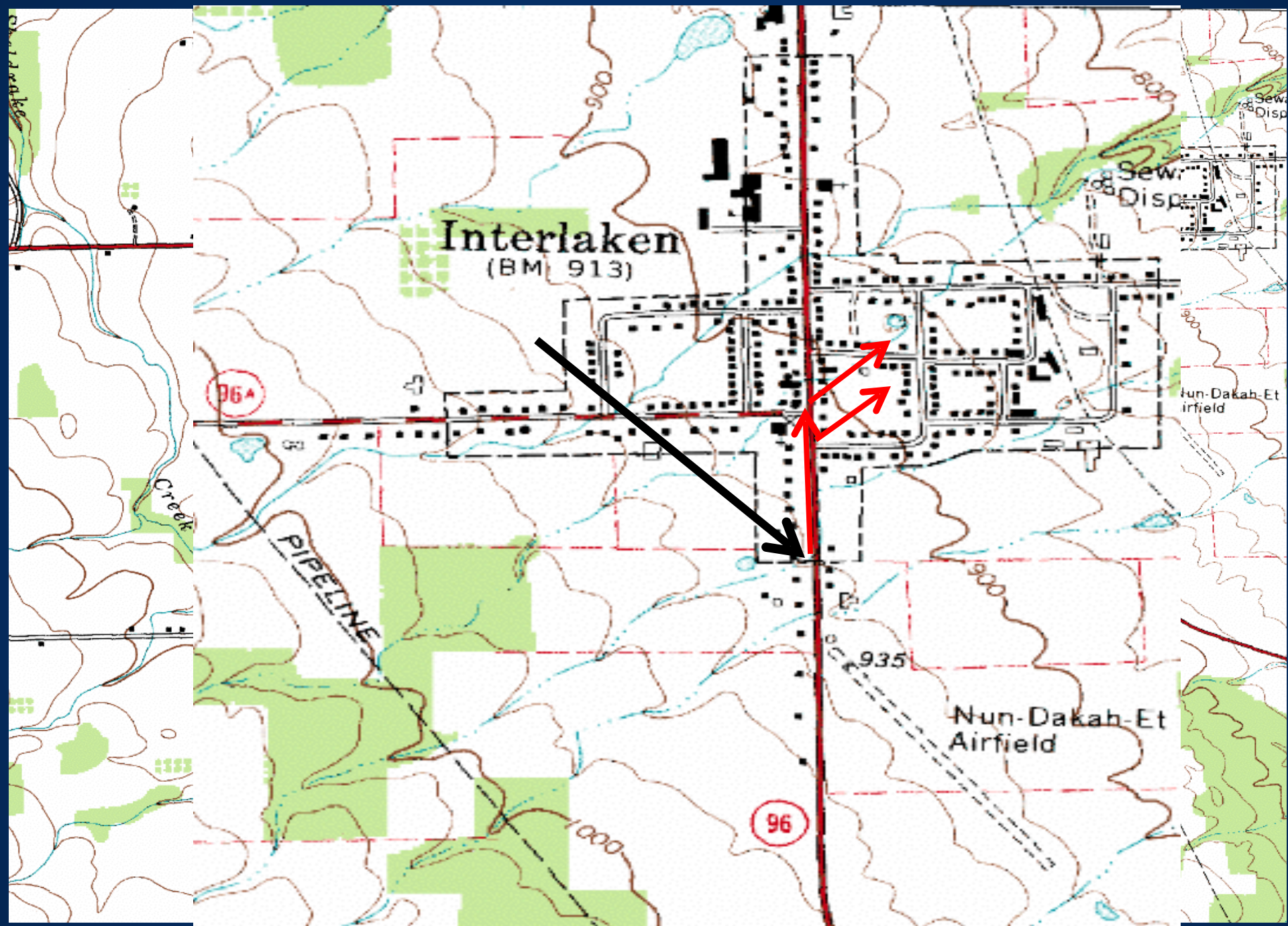
- *Reduce Volume*

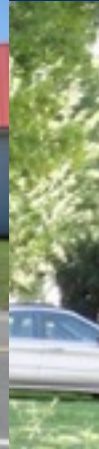


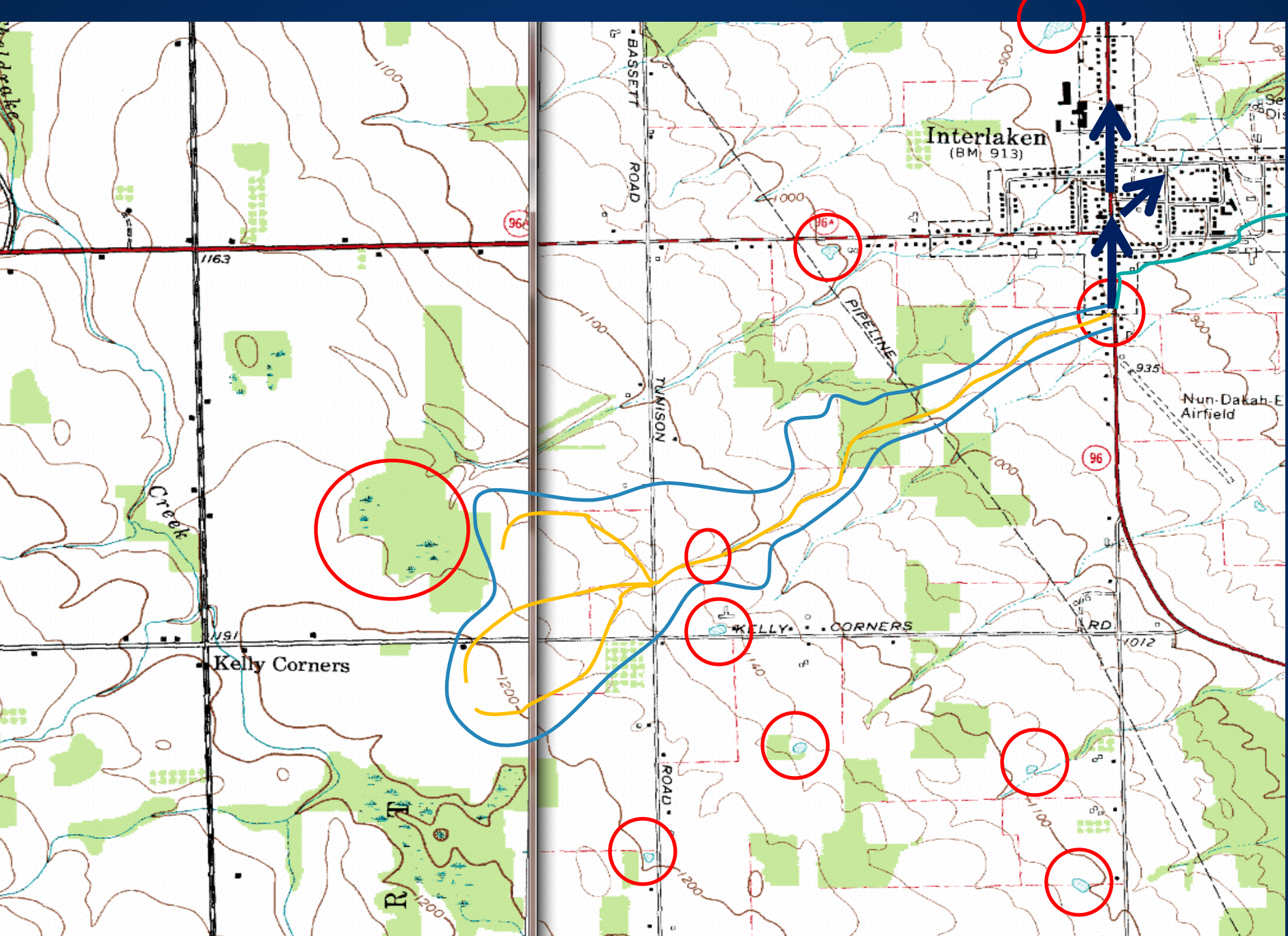
VILLAGE OF INTERLAKEN

Flooding







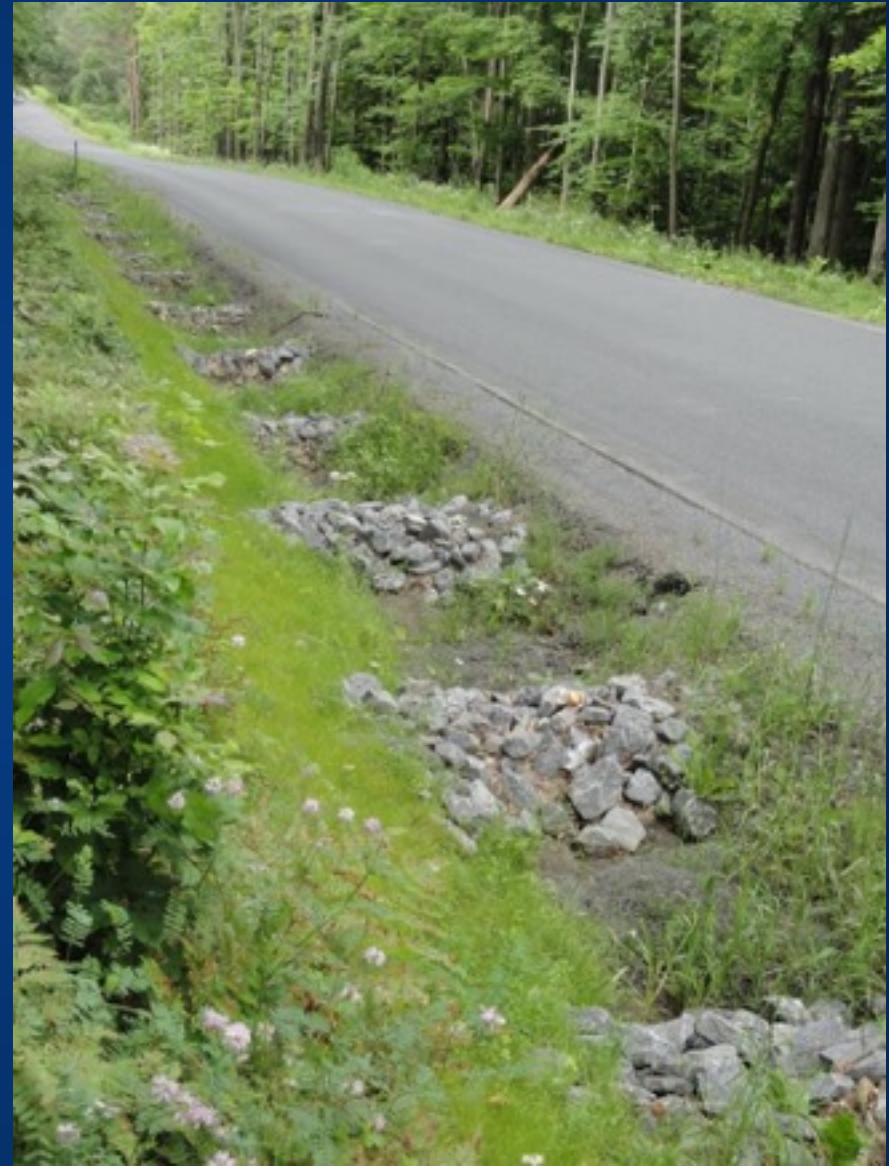






REDUCE VELOCITY

- *Slow the Flow Down!*



VERTICAL DROPS

Reduce Velocity





CHECK DAMS:



CHECK DAMS:

Reduce Velocity



RIP RAP OUTLETS



SPLASH POOL



STABILIZE & PROTECT



STABILIZE



STABILIZE



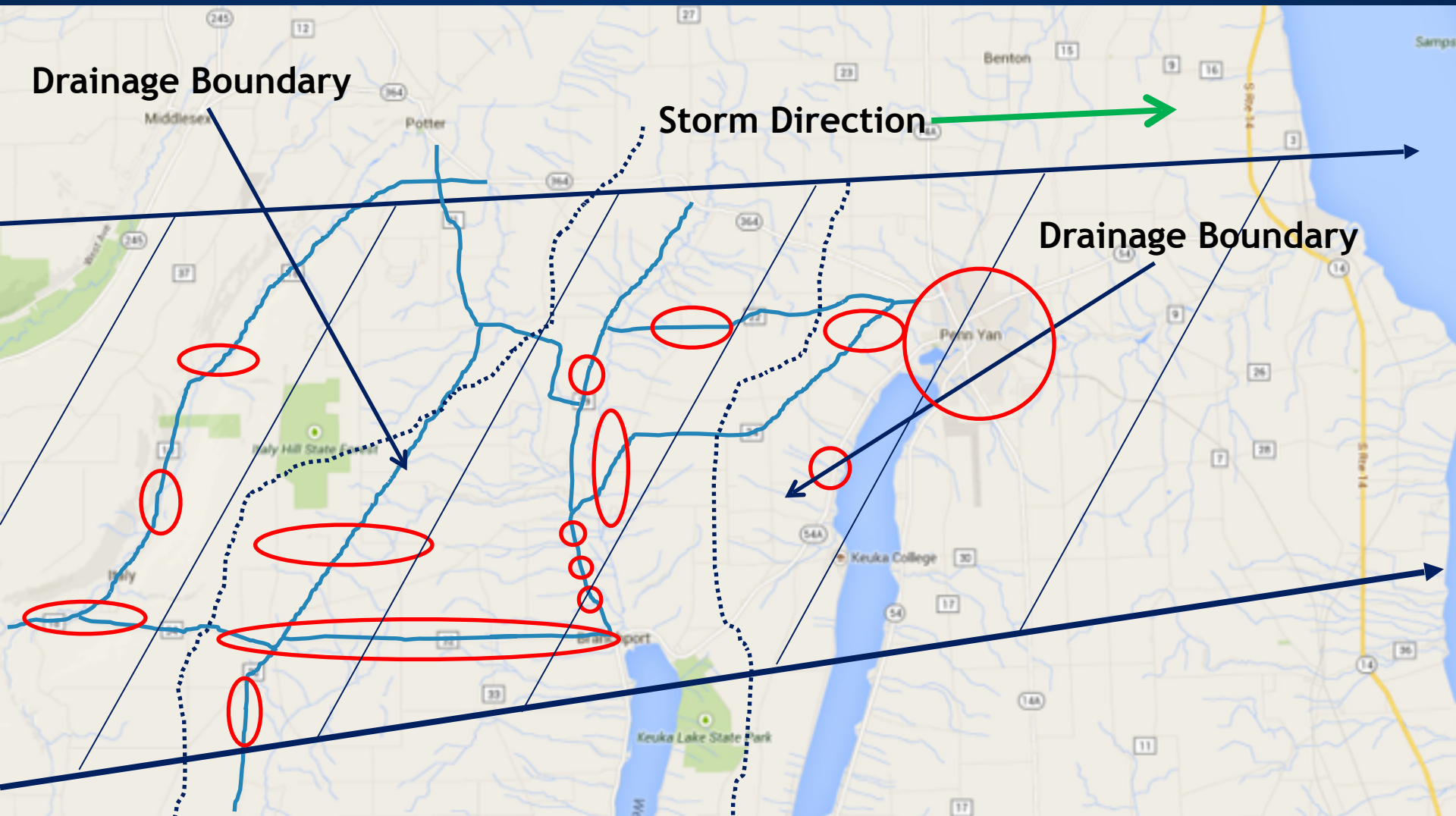
STABILIZE

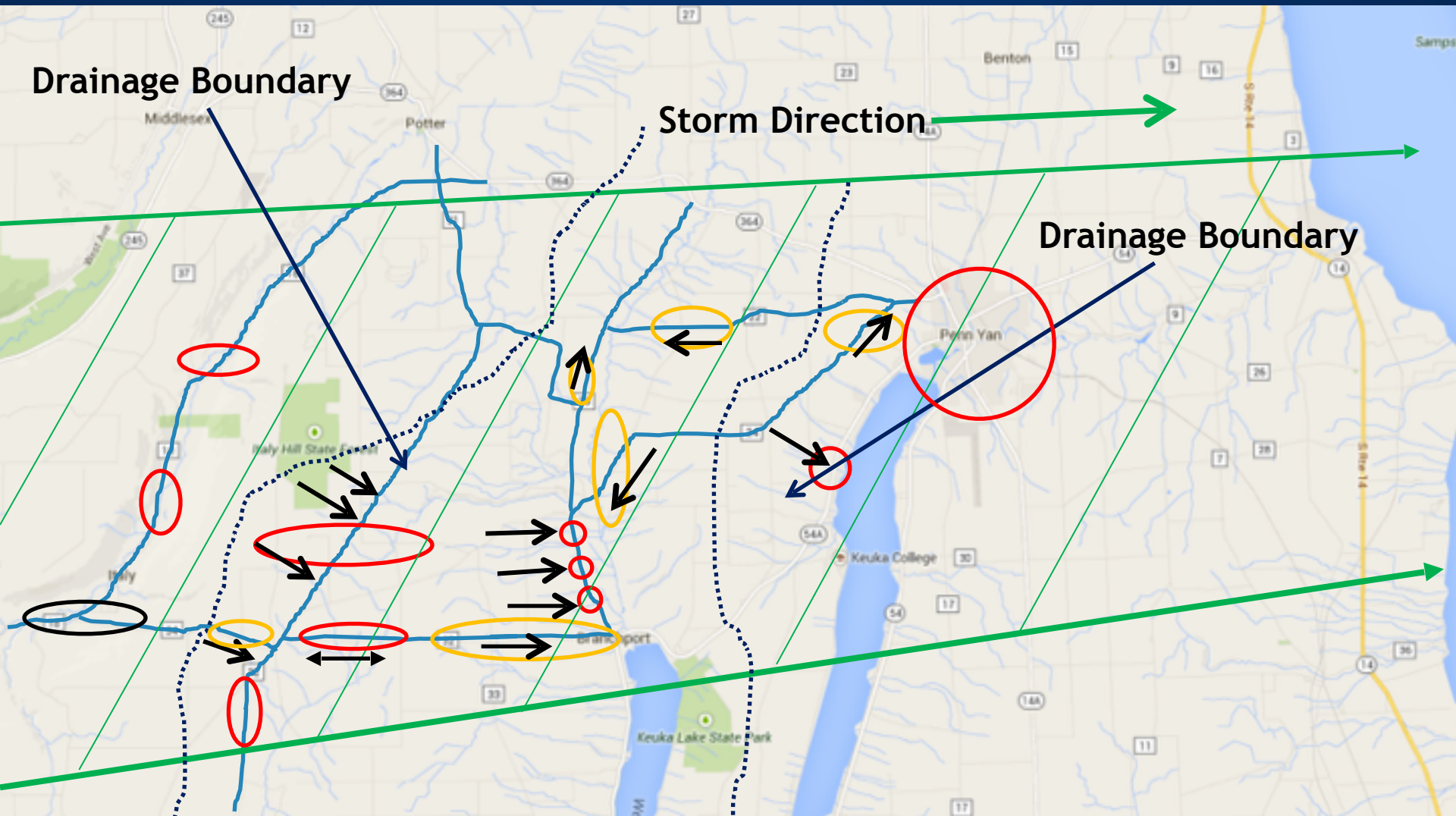


OTHER METHODS



PENN YAN

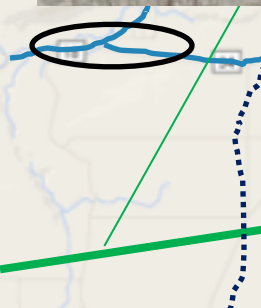


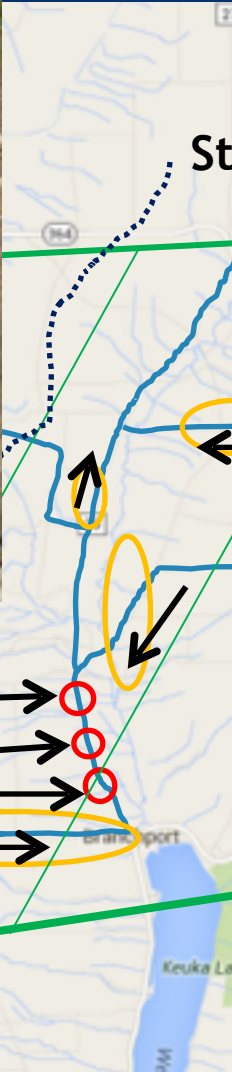


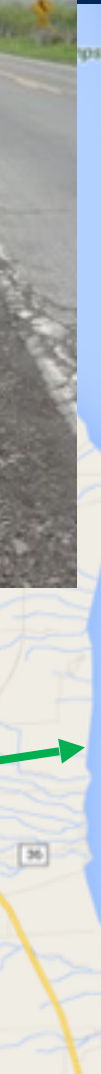
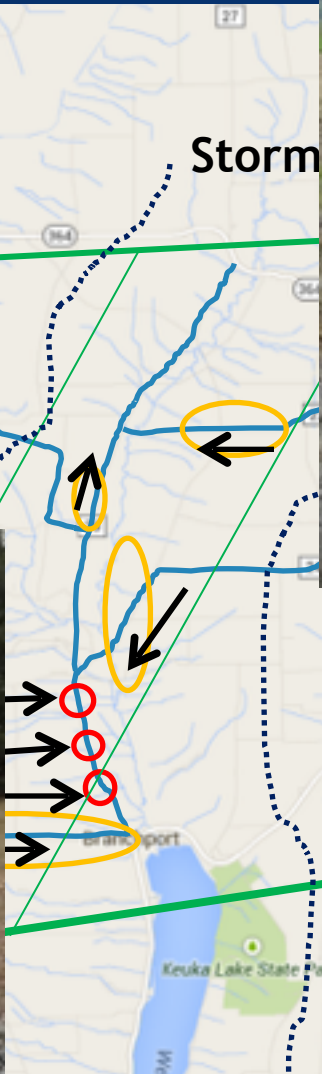
Drainage

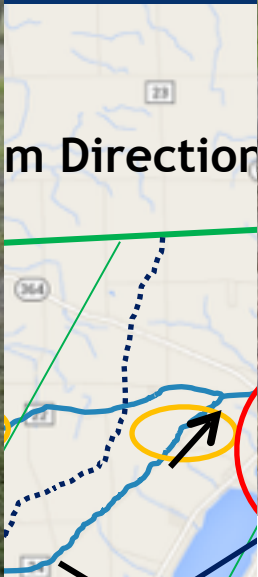
Middle

245

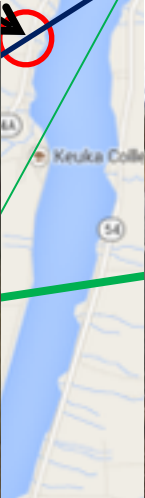
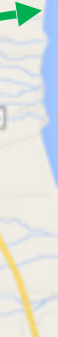








Samps



How do you Improve Resiliency in Managing Stormwater?

- *Reduce the Volume*
- *Reduce the Velocity*
- *Stabilize*
- *Inspect*
- *Maintain!*



THANK YOU!

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