

DEVELOPMENT OF PHASE 6 LAND USE EXPORT RATE TARGETS

Urban Stormwater Workgroup

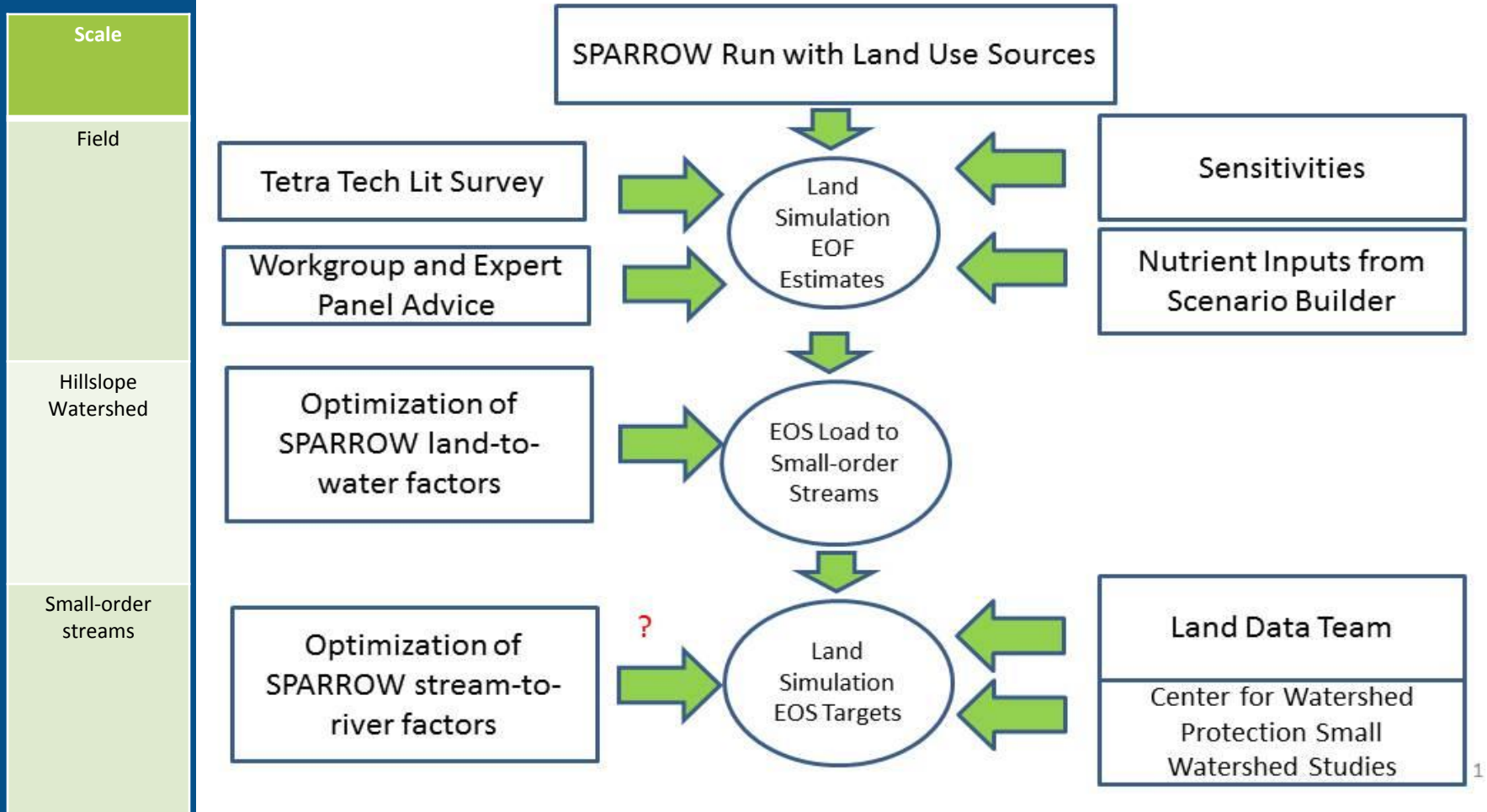
March 3, 2015

Olivia Devereux

EXPORT RATES AND TARGETS

- Export rates from multiple models and literature are used to inform the targets
- Targets are specified export rates used to calibrate the Phase 6 Watershed Model
 - Do not include BMPs
 - Orders the influence of different land uses
 - Vary geographically based on nutrient and hydrology inputs
 - Subject to modification through calibration: actual rate adjusted while relative differences maintained

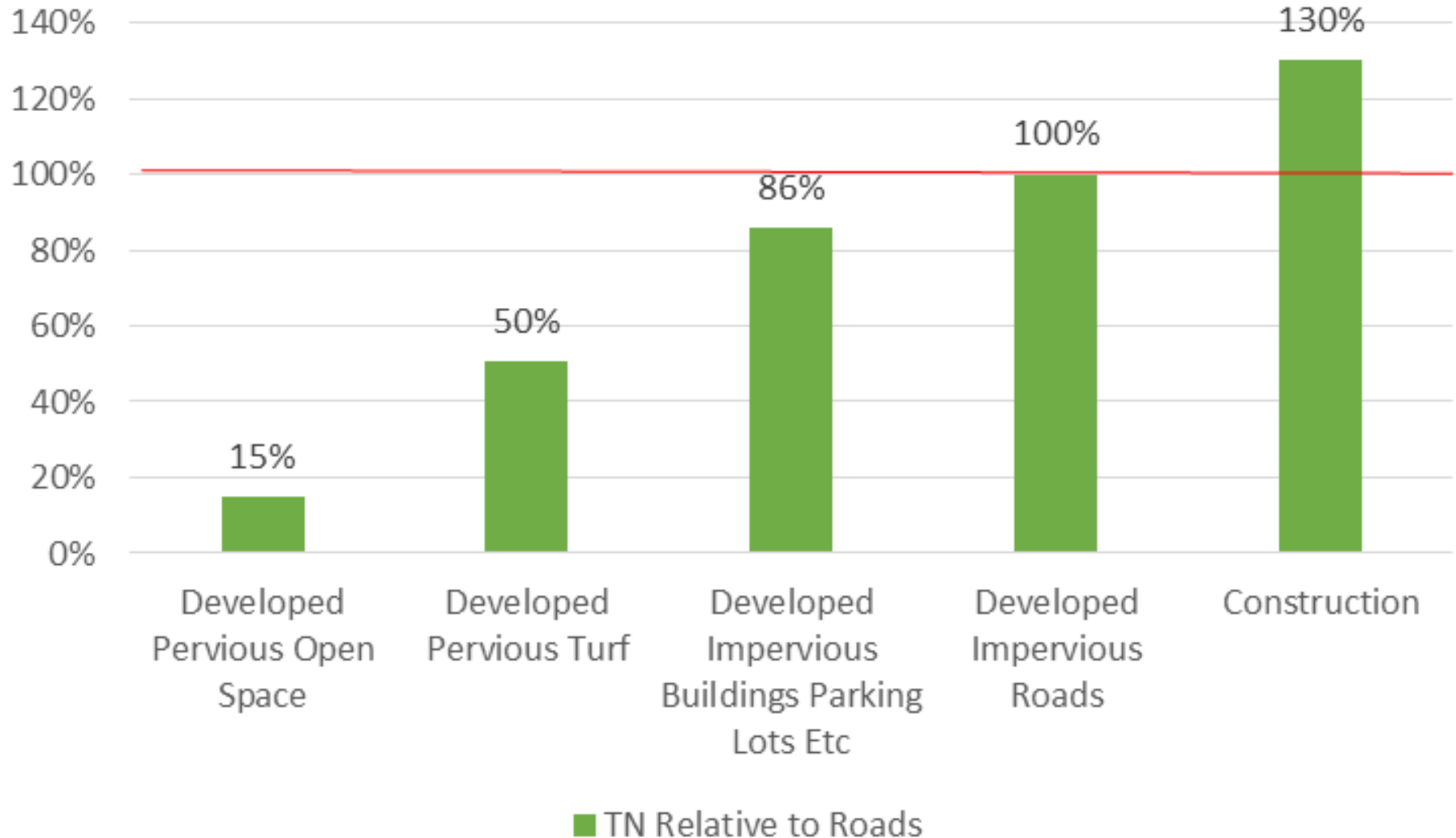
LAND SIMULATION DEVELOPMENT



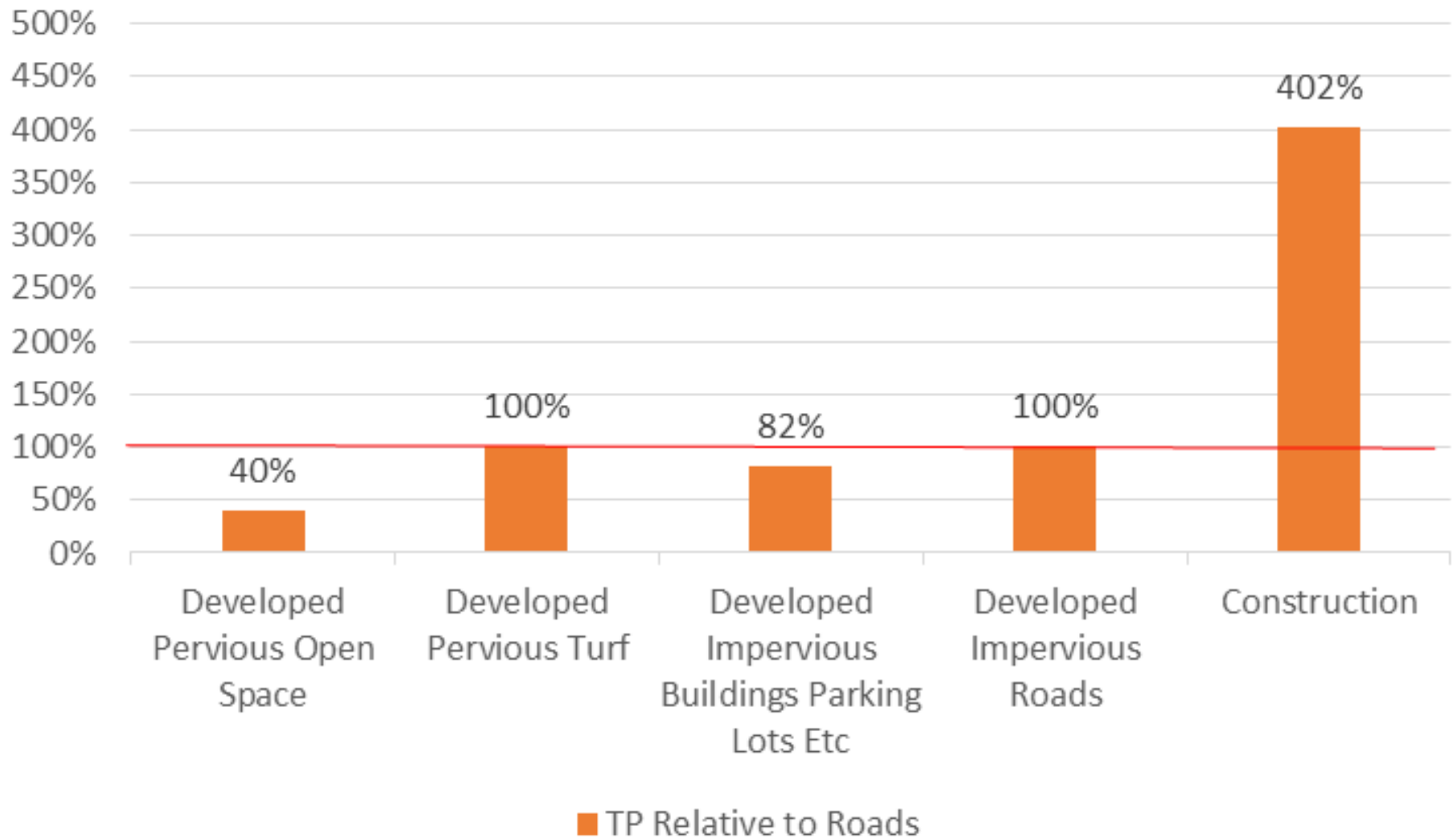
URBAN STORMWATER WORKGROUP INPUT

- Discussed at October and December USWG meeting
 - Data from National Stormwater Quality Database (NSQD)
 - Edge of Field
 - Mapped NSQD land uses to Phase 6 land uses
- Discussed at December USWG meeting
 - Method for scaling median from literature review to all land segments using local hydrology.
 - Confirmed using the Erosion and Sediment Control Expert Panel recommendation for the target

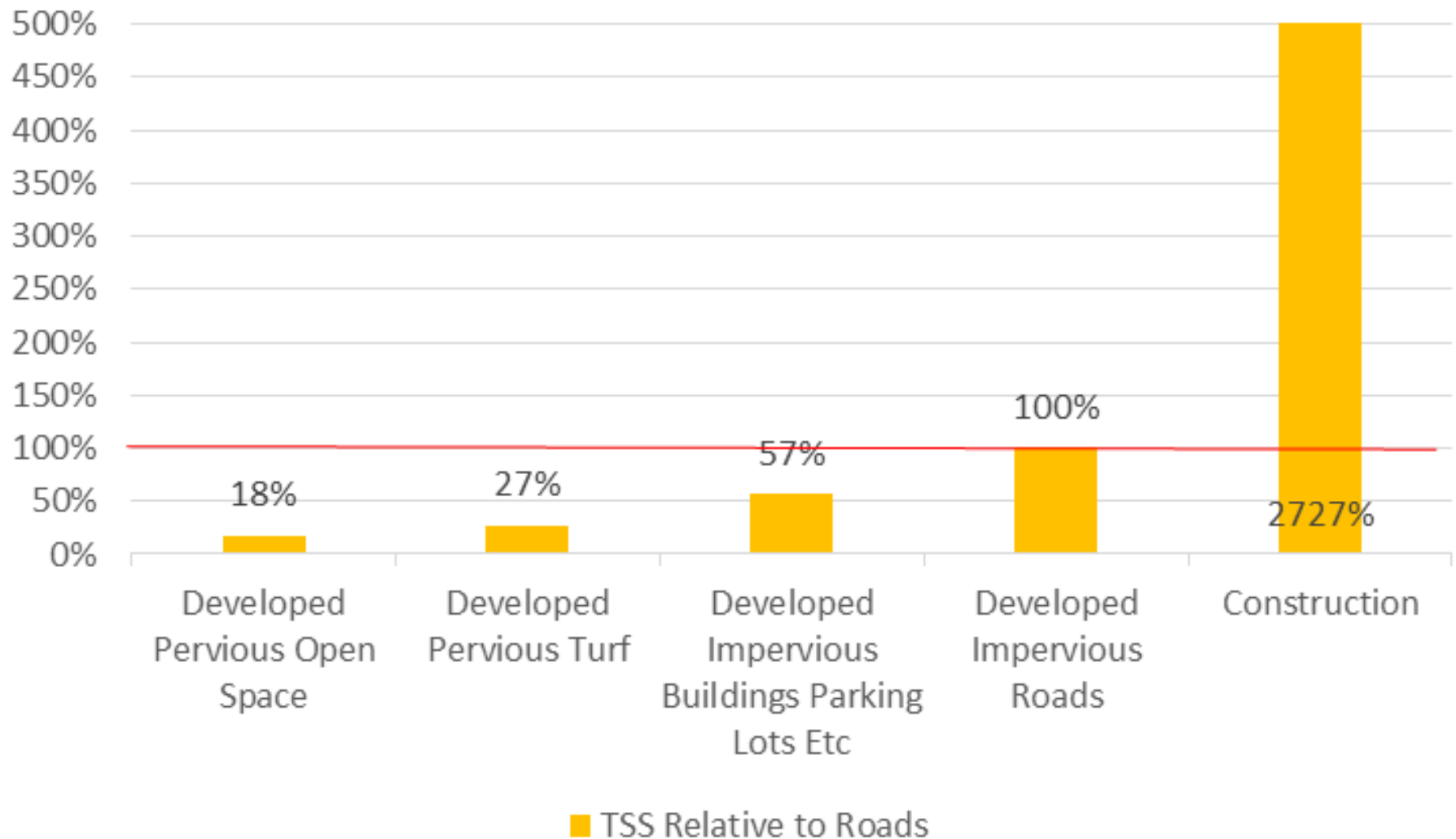
TN – RELATIVE EXPORT RATES



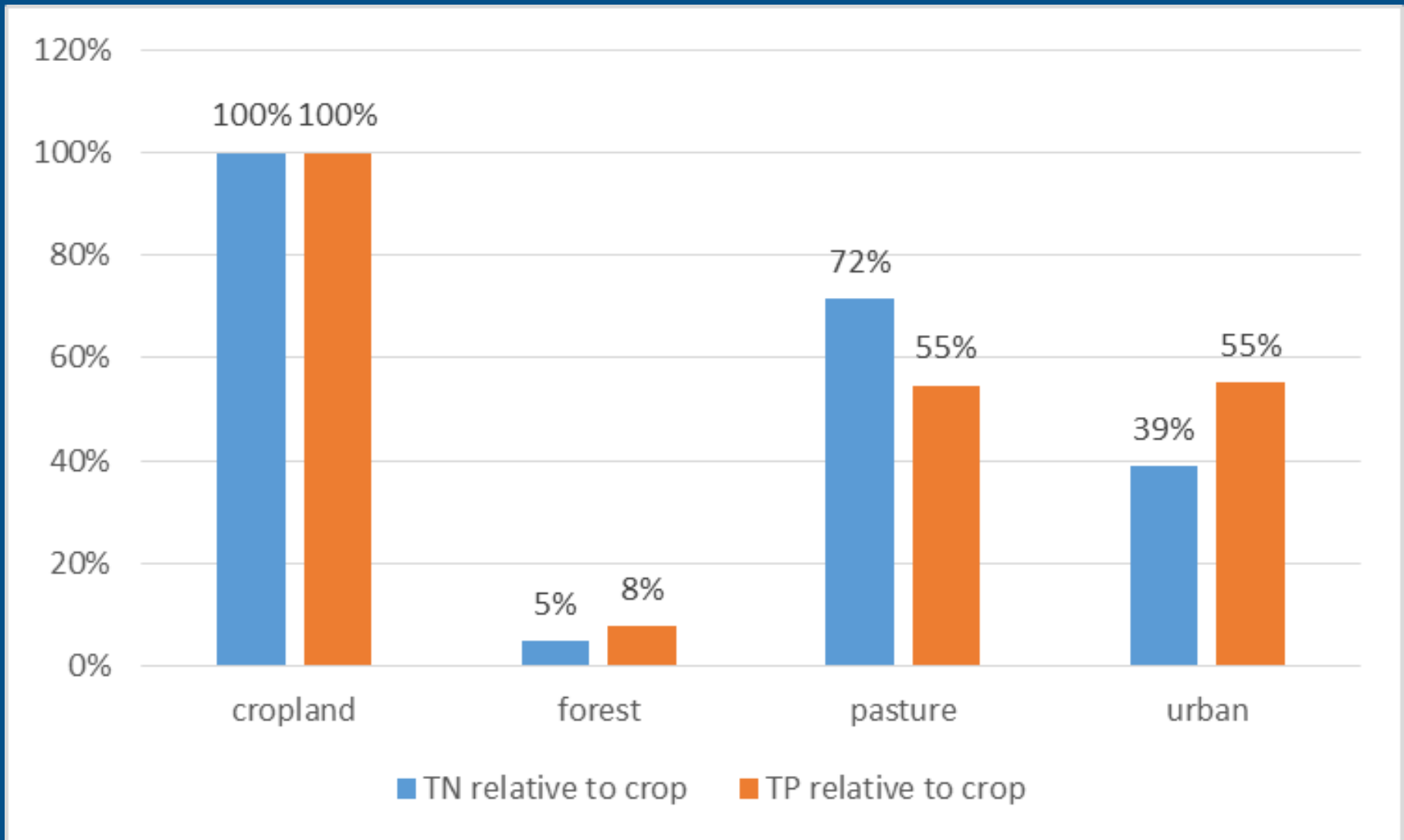
TP – RELATIVE EXPORT RATES



TSS – RELATIVE EXPORT RATES



DRAFT GLOBAL RATES USING SPARROW



TIMELINE

- December 31, 2014 - Sparrow and literature review results for draft land uses
- January 28, 2015 – Input from Modeling Workgroup on draft targets for draft land uses
- April 30, 2015 - final targets approved by Modeling Workgroup for draft land uses
- Oct 1, 2015 - Once the final land uses are approved, we will finalize targets using a Sparrow update, final sensitivities, and other information.

ROLE OF WORKGROUPS

Chesapeake Bay Program committees, goal implementation teams, workgroups or action teams	Meeting Date
Modeling Quarterly Review	9/30/2014, 1/29/2015, 4/22-23/2015
Modeling Team Meeting	9/15/2014, 1/20/2015, ongoing weekly
Land Use Workgroup	9/25/2014; 2/26/2015
Watershed Technical Workgroup	10/2/2014, 3/5/2015
Forestry Workgroup	10/1/2014, 3/4/2015
Wetlands Expert Panel	11/12/2014
Urban Stormwater workgroup	10/21/2014, 12/16/2014, 3/3/2015
Agricultural Workgroup	10/9/2014, 10/22/2014, 2/19/2015, 3/18-19/2015 ?
Agricultural Modeling Subcommittee	9/16/2014, 12/16/2014, 2/12/2015, 2/18/2015, 3/13/2015 ?

- Panel, workgroup documents and recommendations, and available literature are critical sources of data in addition to the full literature review
- Modeling workgroup approves the final Phase 6 model

NEXT STEPS

- Finalize land uses
- Set literature review loads as relational within Sparrow land uses loading rates
- Address scale issues of Edge of Field, Edge of Small Stream and Edge of Stream in literature review data.
- Work on land uses where there was little/no information in the lit reviews
- Determine differences in loads by depth (surface, interflow, groundwater)
- Determine differences in loads by nutrient species
- QA/QC checks including verifying data outliers

KEEPING UP TO DATE – WEBPAGES

- Land Use Loading Rates

https://www.chesapeakebay.net/about/wmp_for_mpa_effort/land_use_loading_rates

- Additional information on Mid-Point Assessment

http://www.chesapeakebay.net/groups/group/water_quality_goal_implementation_team/wmp_for_the_mpa

REASONS TO DIFFERENTIATE LAND USES

- Literature, models, other data sources offer distinct land use loading rates
- BMPs are exclusive to one type of land use (e.g.: stream corridor buffers or fencing)
- Helps jurisdictions for planning and reporting purposes (e.g.: regulated and nonregulated urban, AFO and CFO).

CONSTRUCTION

- The Erosion and Sediment Control BMP Expert Panel recommends:
 - TSS target = 12 Tons/Acre
 - Assumes a no BMP condition. The E&S BMP further reduces this load.
 - Keep the TN and TP targets at the 5.3.2 levels of 26.4 and 8.81 lb/A
 - Assumes some E&S controls are in place. However, the Expert Panel recommended no E&S BMP nutrient reduction.