Historical Documentation

Watershed Downstream from Burch Kove and the proposed Merin Rd. project to the Homestead Bridge over Bolin Creek

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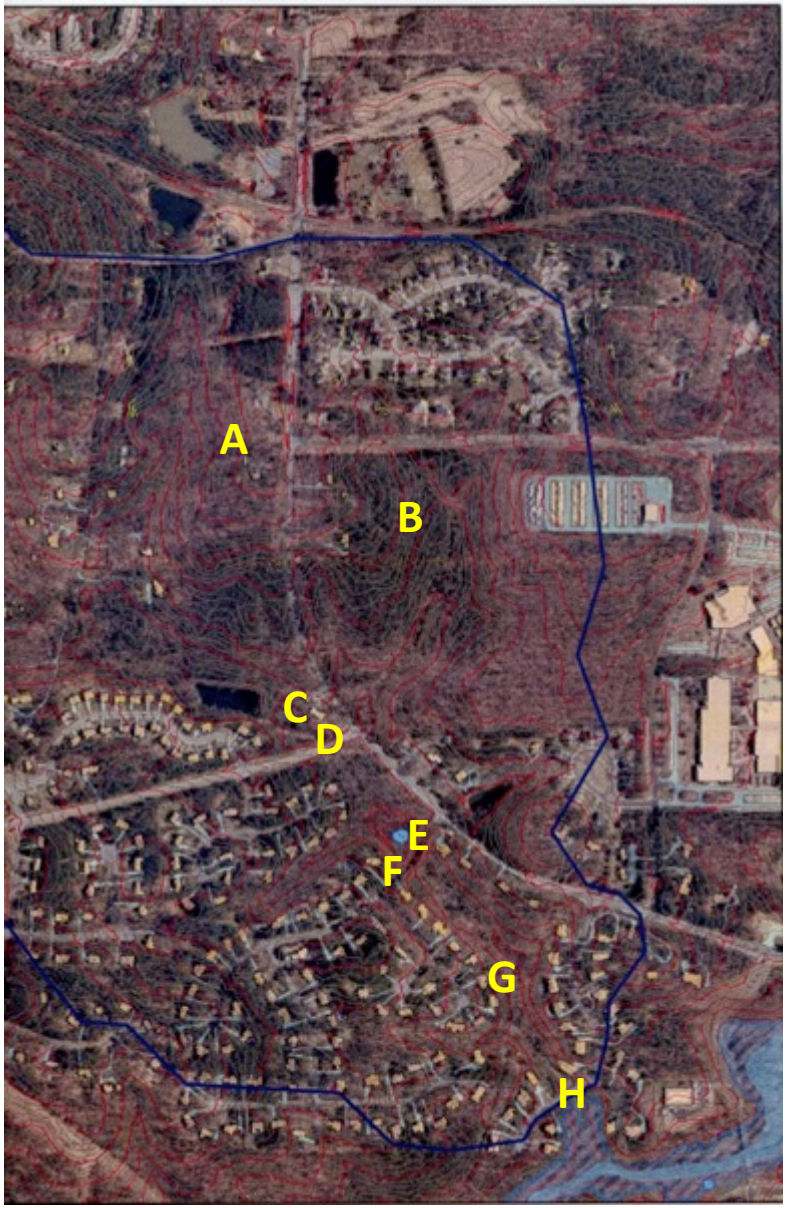
Document Outline

- Map showing Watershed area downstream from Burch Kove and Merin Road
- April 2014 Flooding, Erosion and Sedimentation during Burch Kove construction
- December 30, 2015 Flooding and post-flooding pictures and videos
- Recommendations

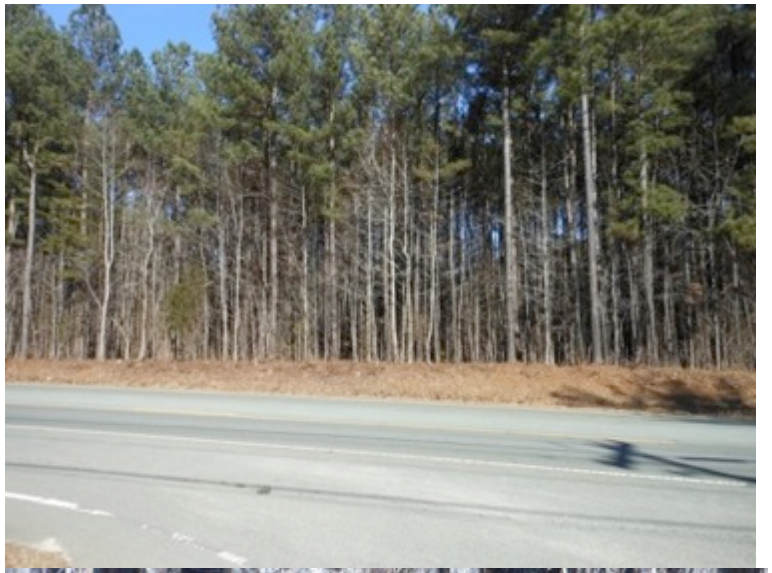
Areas referenced in presentation

A - Merin Road project
B – Burch Kove Development
C – 1804 Homestead Road
D – Rogers Road culvert
E – Sterling Bridge Road culvert
F – 1613 Skye Drive
G – 1601 Skye Drive
H – Camden culverts



View of proposed Merin Road site

From Homestead Road on Feb. 14, 2016



With permission from Billabong resident, behind house, on Feb. 16, 2016.

Note: Red lines show height of hillside on opposite side. Note sloping of terrain.

Runoff coming from Burch Kove during initial clearing of property – April 2014

Burch Kove runoff merging with runoff from Homestead/ Rogers Rd. Culvert April 2014

Runoff continuing through Sterling Bridge Road culvert in the Highlands April 2014

Flooding viewed from Sterling Bridge Road culvert April 2014 (Skye Drive in Highlands to the right, Homestead Road to the left)

Runoff progressing downstream towards Bolin Creek between Highlands and Camden Lane – April 2014 (**note** the circled bridge at 1601 Skye Drive for future comparisons)

Runoff through Camden culverts April 2014

Burch Kove nearing completion - December 30, 2015 flooding event

Burch Kove runoff December 30, 2015

Stormwater video immediately behind
1804 Homestead Road on Dec. 30, 2015
at the culvert at Rogers Road
downstream from Merin Road project

Note: Resident at 1804 Homestead said
water was at top of the culvert

https://www.youtube.com/watch?v=VuxvQm3P4B8

Rogers Road culvert at Homestead Road with no floodwaters on Feb. 5, 2016

Culvert under Rogers Road

View back towards flooding video location behind 1804 Homestead

View from Rogers Road culvert to house at 1804 Homestead (Jan. 26, 2015)

Sterling Bridge Road culvert behind 1613 Skye Drive during flooding Dec. 30, 2015 and with no floodwaters on Feb. 4, 2016

Foot bridge along the creek between the Highlands and Camden Lane on Dec. 30, 2015 (circled in red in a prior April, 2014 slide)

Click on this Youtube link to see flooding in June.
https://www.youtube.com/watch?v=47zwwGguiwg

Same footbridge with no floodwaters on Feb. 2, 2016

Quote from Homeowner at 1601 Skye Drive: “We no longer can grow anything down there. Tree roots keep getting exposed despite our efforts to keep top soil in the area and we've given up on mulch. Flooding just seems to happen more frequently now.”

Downstream side of the Camden culverts on Dec. 30, 2015 (**Note** height of water in culverts)

Flooding downstream from Camden culverts close to Bolin Creek on Dec. 30, 2015

Downstream from Camden culverts with no floodwater Feb. 8, 2016 (**Note** sediment filling the culverts)

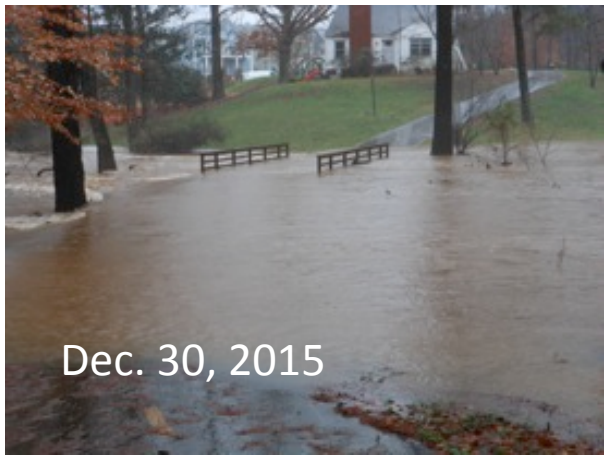
Flooding upstream from Camden culverts on Dec. 30, 2016

Upstream from Camden culverts with no floodwater Feb. 9, 2016 (**Note** accumulating sediment)

Sediment after Dec. 30, 2015 flooding downstream from Camden culverts

Winmore flooding Sept. 6, 2008 at the initial walking bridge over Bolin Creek that was replaced by developer (shown on the next slide). **Note** the shallow and narrow creek at that original bridge and lack of erosion of the banks of Bolin Creek

Dec. 30, 2015 flooding at replacement walking bridge at same location as pictures on prior page. (**Note** Feb. 11, 2016 pictures show the erosion to the Bolin Creek banks from increased and more frequent stormwater runoff)



Winmore walking bridge over Bolin Creek Feb. 12, 2016 – Note significant undercutting of the bridge support. Bridge is 30 feet long and 6 to 7 feet to bottom of creek

Four corners of the Winmore Pedestrian bridge showing potential support compromise – Note: Carrboro should not take ownership of this bridge until it is fixed or ideally replaced by a longer bridge by the developer

Homestead Road bridge Dec. 30, 2015 Flooding

North Side

South Side

youtube videos of flooding at theses locations. **Note:** Carrboro is planning to put a greenway along Bolin Creek, under this bridge.

North Side Homestead Road bridge:
https://www.youtube.com/watch?v=5dcrhEsDkBc&feature=youtu.be
South Side Homestead Road bridge:
https://www.youtube.com/watch?v=yvFHhfZEwbk&feature=youtu.be

February 11, 2016 post flooding pictures at Homestead Road bridge

North Side

North Side

South Side

Homestead Bridge additional views on Feb. 16, 2016

Water in Dec. 30 video was within 39 inches of bottom of bridge (at time video was taken.)

Urgent note: Erosion and water on east side of Homestead Bridge extends behind the steel bridge supports

Video of stream and bank erosion at 200 feet south of Homestead Bridge at potential location of CHHS Multi-use path bridge over Bolin Creek - Feb. 16, 2016

https://www.youtube.com/watch?v=6bzgmA1Fqs4&feature=youtu.be

While impervious surface significantly contributes to stormwater runoff, clear cutting also reduces the amount of rainfall absorption of non-impervious surfaces. **Note:** See Winmore pre-construction photos below. The developer for Winmore is the applicant for the Merin Road project.

Recommendations

- Conduct study of culverts and bridges downstream from Merin Road to Bolin Creek at Homestead Road to determine the advisability of the proposed density of the project
- Undergo a careful analysis of the cumulative impact of the Merin Road, Burch Kove and Winmore developments on Bolin Creek and the impact to existing infrastructure and property owners in both Carrboro and Chapel Hill
- Ensure that a cost/benefit analysis of the Merin Road project includes downstream infrastructure maintenance and repair
- Require that clear cutting be minimized to maintain as much natural water absorption as possible by identifying tree areas to be maintained and establishing financial penalties if clear-cutting occurs