Mr. Michael Berhendt
Durham Town Planner

Michael,

You asked, so here are some comments on the Climate Action Chapter for the Durham Master Plan. It is an excellent mix of educational background, local application of the regional, state, and global trends, and an outline of actionable steps. Typos and such first:

1. In the 'likely not worth worrying about' category there are multiple places in the text where ‘data’ is treated as a singular noun relative to the verb. Data is plural of datum. I took too much Latin as a kid, and had a grammarian on my PhD committee, and used both forms when dealing with elevation data relative to some vertical datum for much of my career. I flagged them if you want, but I’m likely one of the very few in the world who would notice. And I am still one of those damn academics I guess.
2. CAC-16: Left column, paragraph was split at ‘reducing the … service life’
3. CAC-19, first line ‘ma3or’ typo
4. CAC-25 box: ‘pass a 50-foot storm event’ should be ‘50-year’
5. CAC-26: last full paragraph, right column at the end, ‘electric powered over vehicles’ should be ‘electric powered motor vehicles’?
6. CAC-42: Need a ‘.’ at end of the first paragraph on the page.
7. CAC-48 and others: Did You Know Box – some bulleted items end with ‘.’ and others don’t. I looked at other boxes and there seems to be a mix of formats for the terminal punctuation of items in the list. May not matter and I know this is way picky and I may have missed the logic behind the difference. I admit I didn’t try to understand them.

The only substantive comment I have for you is really a research topic to some extent. Throughout the chapter, largely as a result of how scientists and engineers work on these issues, flooding due to SLR and storm surge are presented seemingly independently from the upland flooding due to river flow/stormwater runoff. You acknowledge this in a generic sense on CAC-22 in the paragraph that spans the columns. The total water level on the estuarine/tidal shorelines in Durham is the sum of contributions from land and sea, and if the predicted climate shifts toward stronger marine-influenced weather (tropical and bomb cyclone/nor’easters), and more extreme terrestrial driven rain events (FL-style summer thunderstorms), the more planning will need to be done while considering the joint probability of processes. The chapter does hint at this by looking at impact of flood events under different SLR scenarios, but doesn’t address what happens when flood waters are coming from both upstream and downstream sources at the same time... In the academic world we are just now getting serious about combining the predicted river flooding hydrograph with predicted tides and storm surge elevations to better understand coastal flooding.

I don’t know what the response times of the Lamprey and Oyster River drainages are to rain events, but I suspect they are pretty short compared to the Piscataqua and maybe a day or two?

I SUGGEST that on page CAC-56 you lengthen #1 or add a #5 under the Recommended Planning items with suggested wording, if I may be so bold, something like “Investigate the likelihood of increases in severity of flooding due to co-occurring storm surge and river/stormwater runoff flooding on the estuarine shorelines.” It wouldn’t hurt to add a sentence or two in the body of the text as well in the Water Infrastructure section on CAC-22, second paragraph where you mention, without being specific at all, multiple hazardous events. Floods from both directions is a really nice example of what that could mean (multiple could be simultaneous or sequential), and it is something all your residents will be able to understand.

Peter Howd
Durham Point Road (Soon)