

Wake County Fire Departments - Charting Fiscal Data

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Let's play with some more numbers. Continuing the "data experiment" started in [this prior posting](#)—where we posted last year's call totals, number of stations, and special features of the county's fire departments—let's look at finances. How much does it cost to operate the fire departments in Wake County? Or at least as can be determined by this armchair researcher?

There are two types of fire departments in Wake County: public and private. And their funding (and governance) varies among six types:

- **Municipal** – These are exclusively funded by a city or town and supervised by a fire chief, who is supervised by a town or city manager and/or town/city board of something.
- **Municipal with county contracts** – Similar to above, but also contracted by the county, to provide fire protection in unincorporated areas outside their city or town. Thus, they get "town money" and "county money."
- **Private** – These are non-profit private corporations that are exclusively (or nearly exclusively) funded by the county, through contracts, to protect unincorporated areas.
- **Private with municipal contracts** – Similar to above, but also contracted by a municipality to provide fire protection "in town." These get both "county money" and "town money."
- **Airport** – They're a local government, but not a municipality. They're supervised by a Fire Chief, who is supervised by an Airport Manager, who answers to a board.
- **Wendell** – They're a private fire department, funded by county-collected taxes for both the municipal and rural areas in/around Wendell. This is the only such instance in Wake County.

Clear as mud?

District	Sq. miles	Cost Per	Population	Cost per person	Real Property Value
Apex	10.60	\$ 462,650.28	40,042	\$ 122.47	\$ 4,543,123,856
Hipex	51.17	\$ 13,413.91	18,129	\$ 37.86	\$ 1,233,184,024
Combined	61.77	\$ 90,503.84	58,171	\$ 96.10	\$ 5,776,307,880
Bay Leaf	35.93	\$ 41,891.79	23,759	\$ 63.35	\$ 5,066,244,820
Cary	43.50	\$ 440,428.46	142,819	\$ 134.15	\$ 21,055,696,010
Cary Suburban	1.23	\$ 44,769.92	386	\$ 142.77	\$ 112,520,536
Combined	44.73	\$ 429,548.51	143,205	\$ 134.17	\$ 26,234,461,366
Durham Highway	9.54	\$ 76,558.91	8,183	\$ 89.26	\$ 1,258,833,323
Alert (EWFd)	45.08	\$ 35,767.77	17,292	\$ 93.25	\$ 1,630,115,474
Ten Ten (FFD)	25.08	\$ 45,055.62	17,631	\$ 64.09	\$ 2,100,702,940
Fuquay-Varina	12.41	\$ 252,861.08	18,899	\$ 166.04	\$ 2,227,104,327
Furina	55.26	\$ 24,518.89	23,334	\$ 58.07	\$ 2,424,211,764
Combined	67.67	\$ 66,394.56	42,232	\$ 106.39	\$ 9,640,967,828
Garner	13.60	\$ 145,756.03	25,605	\$ 77.42	\$ 3,029,636,482
G Suburban	64.76	\$ 24,709.06	28,186	\$ 56.77	\$ 2,744,746,233

The numbers behind those categories are a little hard to unearth. Wake County Fire Services provided the yearly allocations for its fire service contracts, as well as district sizes. Everything else required research. With the help of Google, the below results were drawn from various current (or past) budget documents. What's missing? Other funding sources, such as state contracts. (Western Wake has those, right?)

You'll see exact or approximate costs for FY12, for the fire departments in Wake County. From there, I've added number of stations, number of

square miles, and populations. Sources for that data includes Wake County Fire Services and Google. (Another source for square miles, for rural insurance districts, is the [online iMaps application](#). Use the Acreage value, which is accurate. Convert to square miles.)

In addition to these values, I've added "per X" computations. Per call, per square mile, per station, etc. Makes it interesting, but also maybe misleading. There are probably much better "metrics" to compute and compare. Better analysis might be derived from, say, property valuation. Or population density. Or response times. You get the idea. My data is somewhat random "play."

(And we haven't even touched upon governance. The various types of fire departments are regulated, governed, and influenced by a diversity of factors: OSFM, ISO, federal and state laws, county contracts, municipal ordinances, chief officer directions, board of director directions, and so forth.)

I also offer apologies for anyone who has heartburn at seeing these numbers "exposed" for everyone to see. We're well into the shared information age, and this posting is also serving a meta-purpose. On the surface, it's sharing data to those, like myself, who are information/analysis geeks. At a higher level, it's also demonstrating the power of (and observing the effects of) information sharing. How will folks react to this summary? What conversations or interactions will result? To be determined.

It's hard to miss with transparency. Most systems are strong enough to survive sunlight. It usually just zaps a few germs that the system's become accustom to.

[View the spreadsheet](#) (PDF).

[View largest/smallest districts](#) (PDF).

I really enjoyed looking at your data. I found it very interesting. One of the things that I mentioned in a prior posting is there should be a tax base component in the calculations. Morrisville has a relatively small population but a relatively large tax base, especially when you consider the RTP area and interstate(s) that are protected.

Spanky - 02/21/13 - 21:23

Interesting data. Others will read it differently, but that chart tells me that Garner is way under funded based on population and call volume.

Mike - 02/21/13 - 21:57

I'd love to work with someone at, say, SAS, to help analyze data like that (wink wink) it would be great to be able to add comparisons and cost per X on all id the closest unit, tax based, and interstate responses. How many cars go through 40 and Wade or 40 and 440 a day, etc. What's the daytime population of Morrisville or Cary versus permanent residents?

Sasser ([Email](#)) - 02/21/13 - 21:59

Seems stations with full time paid Chiefs have substantially higher cost of providing services than those that don't... Good place to start the budget cuts.

Nope - 02/21/13 - 22:55

The vast differences in appropriation is one reason why a greater effort for funding standardization is needed. There are not enough standards that regulate costs now, therefore unequal funding elements exist. NOTE – call volume and cost per call are not good measures as the FD is really in the "insurance business." The true investment is in capability rather than activity. On another note, use a ratio of actual tax value to appropriation for a different perspective (when Mike posts the property values).

A.C. Rich - 02/22/13 - 01:11

I'm not sure what I enjoy more, maps or data charts like these. Keep up the work Mike as this is great info!

H2O - 02/22/13 - 11:04

Hey Mike the Town of Knightdale actually data is listed below. Info taken from the town's website.

Corporate Limits (1/1/12) 6.25 sq. mi.

Extraterritorial Jurisdiction (1/1/12) 18.93 sq. mi.

A. Stanley - 02/22/13 - 11:45

Mike, I noticed Holly Springs and Hopkins run numbers are switched. Thanks

Observer - 02/23/13 - 11:25

Can we eliminate closest unit response for say Western Wake and Swift Creek and then see what it costs to run those departments?

ncnjems - 02/23/13 - 17:26

And how about for some real fun. A totals box, and see what it is when everything is totaled up. Don't think we ever see a one department county, like on the EMS side but it is an interesting concept

ncnjems - 02/23/13 - 17:31

While a tempting exercise to play on paper, I really don't see a WCFD on the radar of the current county leadership. Instead, they seem interested in lower costs and maybe higher governance through the current system. Plus their suggested strategy of more consolidations. But we await appointment of a new Fire Services Director. Who knows what new blood might bring.

Meanwhile, the time is certainly ripe for any departments inclined toward mergers. Or even merged resources. Such as, say, co-located stations, that could be money savers. If CFD and MFD could do it, why not others,

Can't help but wonder if any mega departments will manifest. Think of the monster that could be created on the south side, say, combining SCFD, FFD, GFD, and EWFD. Amusing to ponder, for sure.

Legeros - 02/23/13 - 20:20

Any front-runners for the new Fire Services Director? When is any selection expected to be made?

Manpower - 02/24/13 - 00:57

To add to the comments of Chief Rich on cost-per-call and specifically address ncnjems, the cost of closest unit response is negligible. In fact, for Western Wake that service was added 5 years ago with zero change in budget funding, not to mention there have been no appreciable budget increases in the "single fire tax district" for anyone in that time. The resources (people and equipment) are already in the station. Adding 20-30 calls per month on runs that are generally no more than 1-2 miles adds minimal fuel and maintenance charges to the expenses already incurred. Look at the costs of other similar sized departments such as Hopkins or Durham Highway and you will see that overall operating costs are similar.

D.Cates - 02/25/13 - 13:24

Mike, I found another error. Check your formulas on real property values. For example it shows Cary has a combined \$26,234,461,366 value and it should read \$21,168,216,546. Keep up the good work!

Observer - 02/26/13 - 09:15

Fuquay's real property value total is to high also.

Fuquay - 02/26/13 - 18:35

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