



Strategic Station Management (Stations 835, 855, 814 & 839)

Data Presentation and Analysis

Office of the Fire Chief, Prince George's County

Largo Government Center, Basil Court, Largo MD



The Assigned Task



- The Department intends to take a decision on the future management of four Fire Stations:
 1. Station 835 – Greenbelt
 2. Station 855 – Bunker Hill
 3. Station 814 – Berwyn Heights
 4. Station 839 – Bowie (Belair)
- Key instructions:
 - Utilize incident data for the past year (2023) to map and analyze the nature and distribution of calls for service at each of the fire stations.
 - Consider the relationship between each of the four station and adjoining ones.
 - Present data showing the possible impact of the removal of the stations on the nearby ones considering from the first-responder perspective.



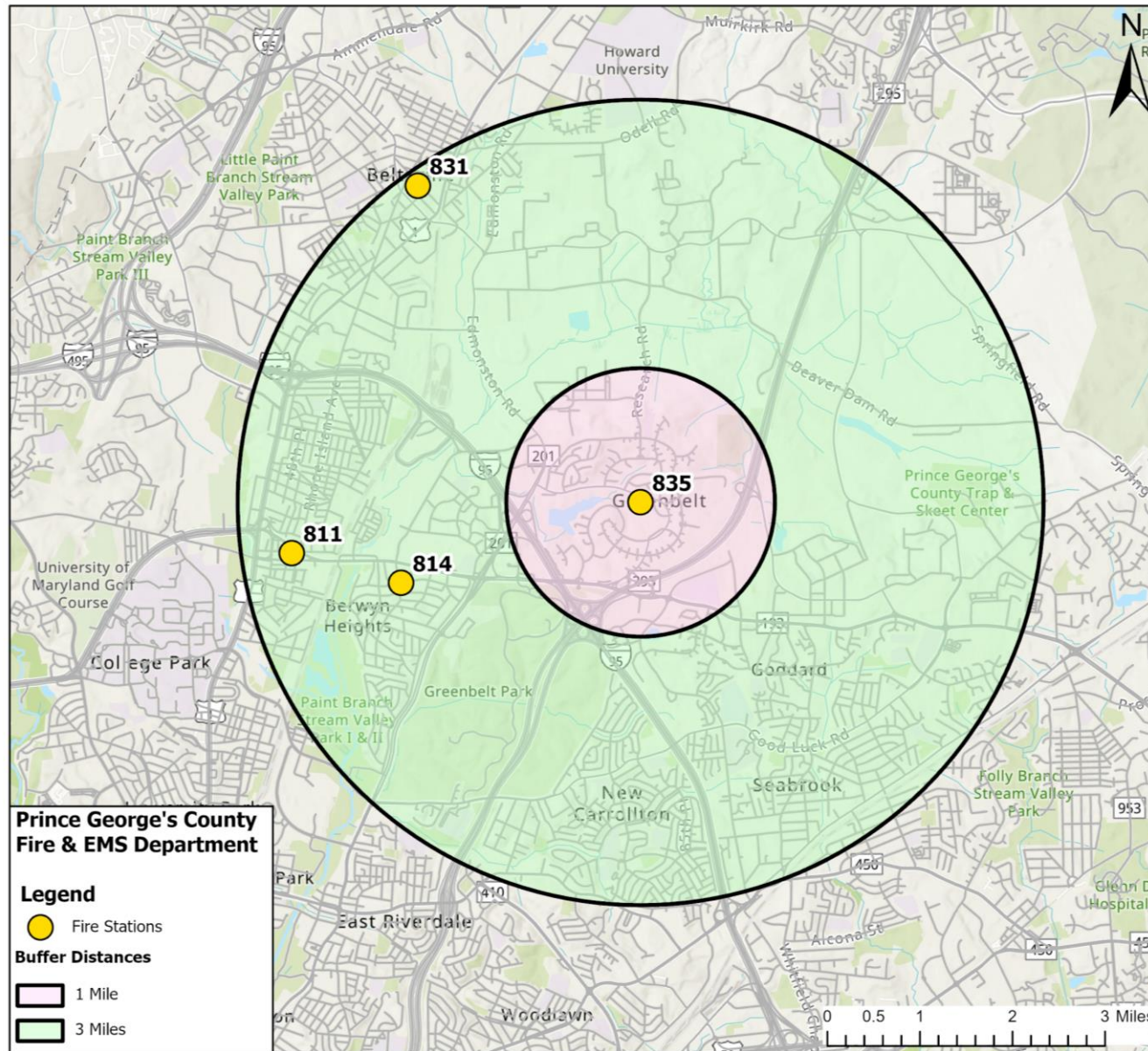
Steps towards the Solution



- a) Identify the GPS-based location of each fire station.
- b) Use Euclidean distance approach to create 1-3 miles buffer for a first-responder scenario to identify adjoining fire stations.
- c) Using the location of each fire station, develop an 8-minute service coverage with the location of 2023 incidents for the main fire station.
- d) Create an incident heat map to indicate the hotspot (density) pattern.
- e) Develop a two-scenario – (1) baseline and (2) exclusion scenarios of the main fire station to show impact of station removal.
- f) Examine the peak station reliability assessment under the 2023 calls for service to examine the station performance for decision making.

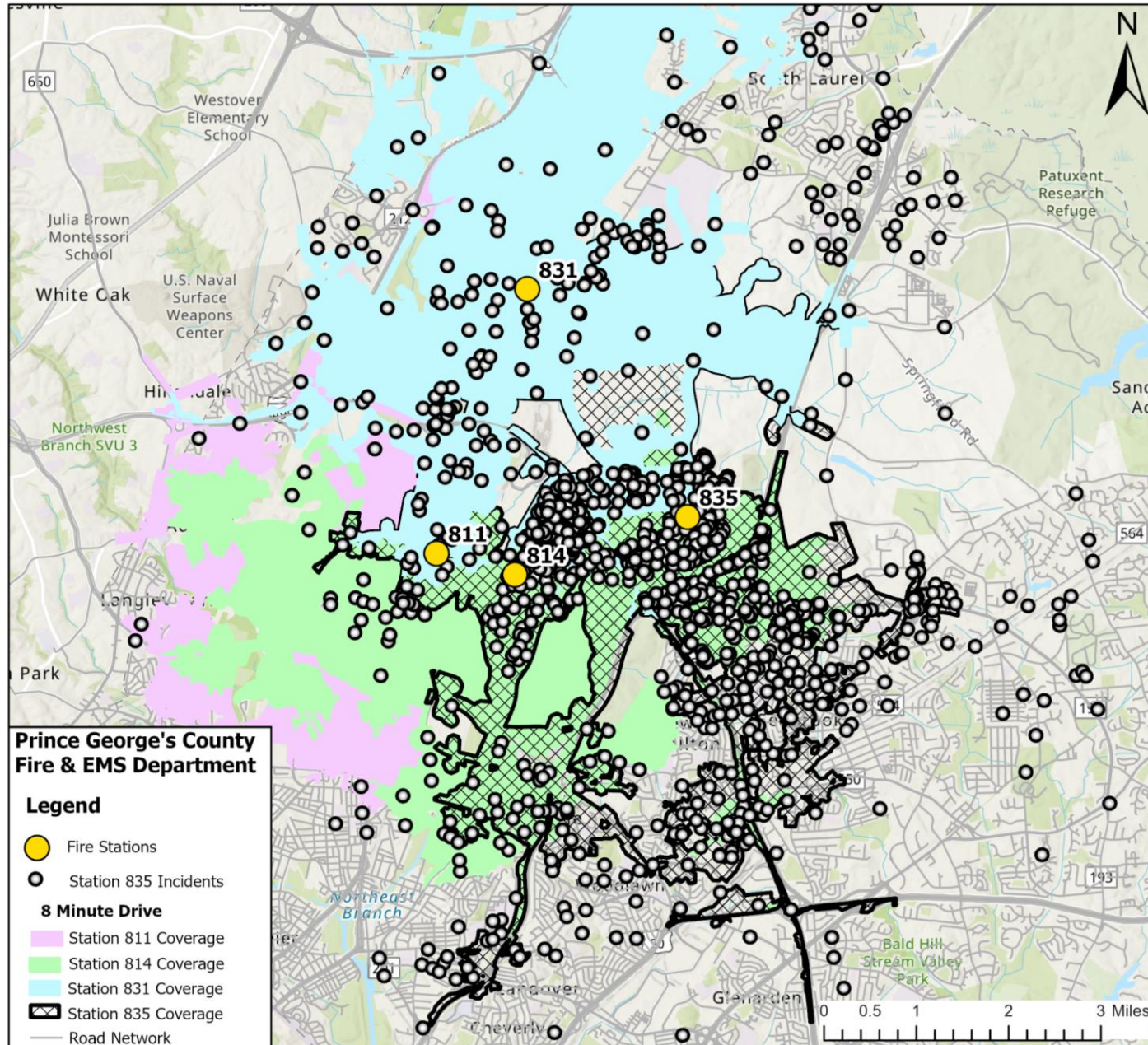


Station 835 – GPS Location with Nearby Stations



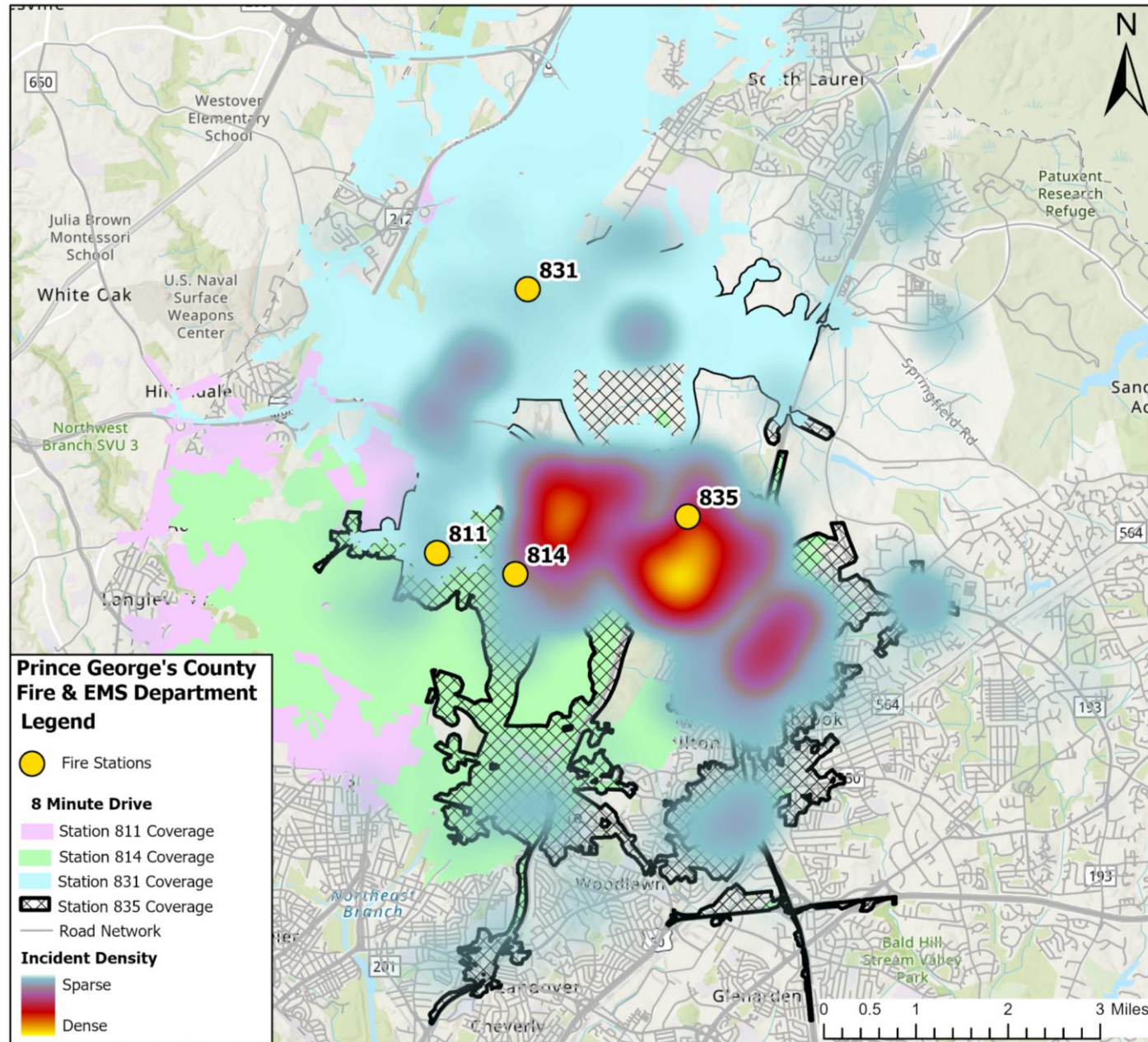


8-Minute Drive Coverage Area of the Stations





Station 835 – Incident Density





Station 835 – Scenario Analysis



BASELINE SCENARIO

Station	Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total	
811	35	6	450	1,038	263	78	38	540	77	2,525
814	49	5	993	2,093	1,123	230	63	1,410	301	6,267
831	104	4	1,141	1,908	926	245	74	1,065	199	5,666
835	90	16	1,897	458	616	201	79	1,353	175	4,885

EXCLUDE STATION 835 SCENARIO

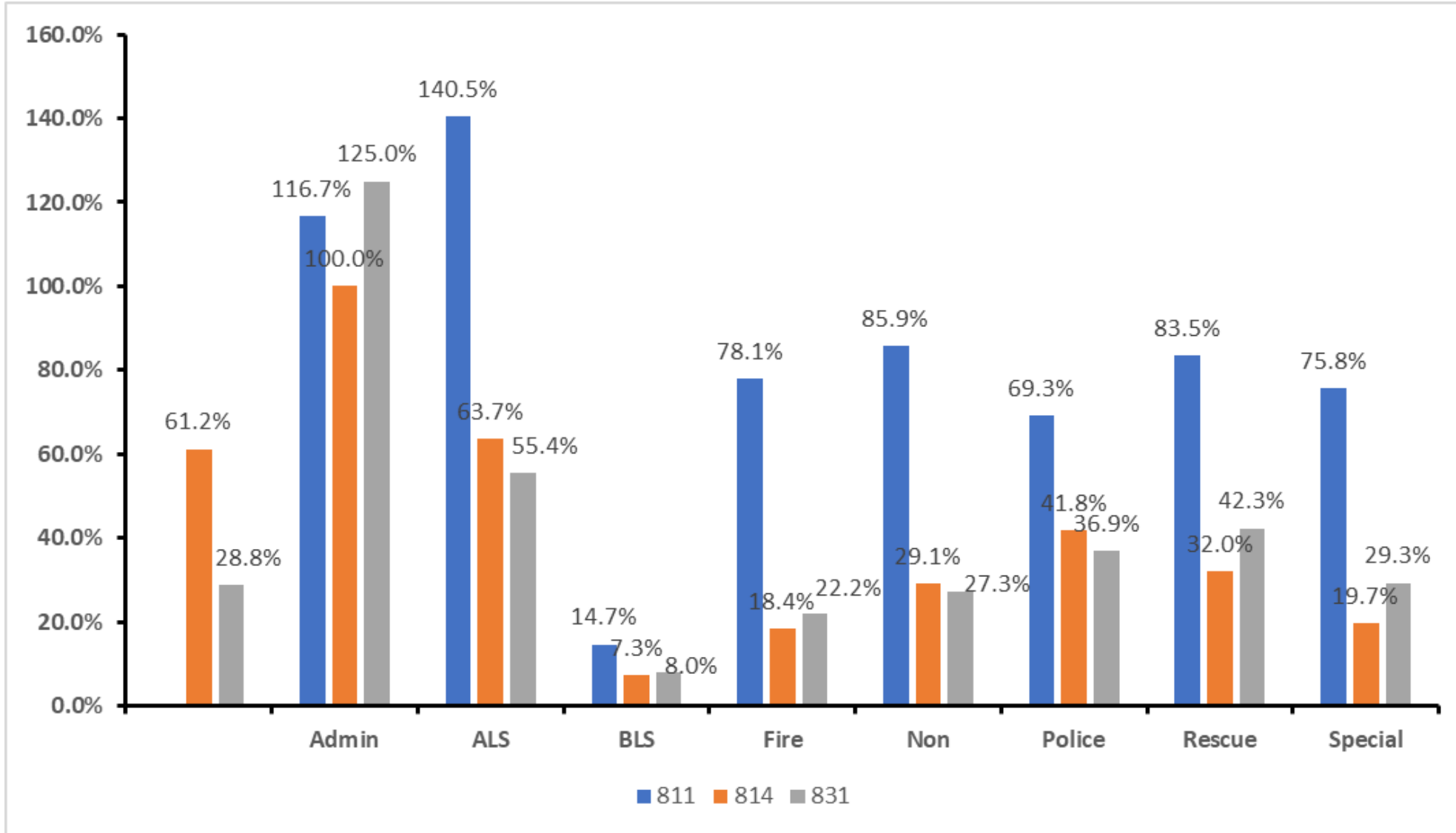
Station	Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total	
811	65	13	1,082	1,191	468	145	64	991	135	4,155
814	79	10	1,625	2,246	1,329	297	89	1,861	360	7,897
831	134	9	1,773	2,061	1,131	312	101	1,516	257	7,295
835	0	0	0	0	0	0	0	0	0	0

POTENTIAL CHANGE

Station	Admin	ALS	BLS	Fire	Non	Police	Rescue	Special	Total	
811		116.7%	140.5%	14.7%	78.1%	85.9%	69.3%	83.5%	75.8%	64.6%
814	61.2%	100.0%	63.7%	7.3%	18.4%	29.1%	41.8%	32.0%	19.7%	26.0%
831	28.8%	125.0%	55.4%	8.0%	22.2%	27.3%	36.9%	42.3%	29.3%	28.8%

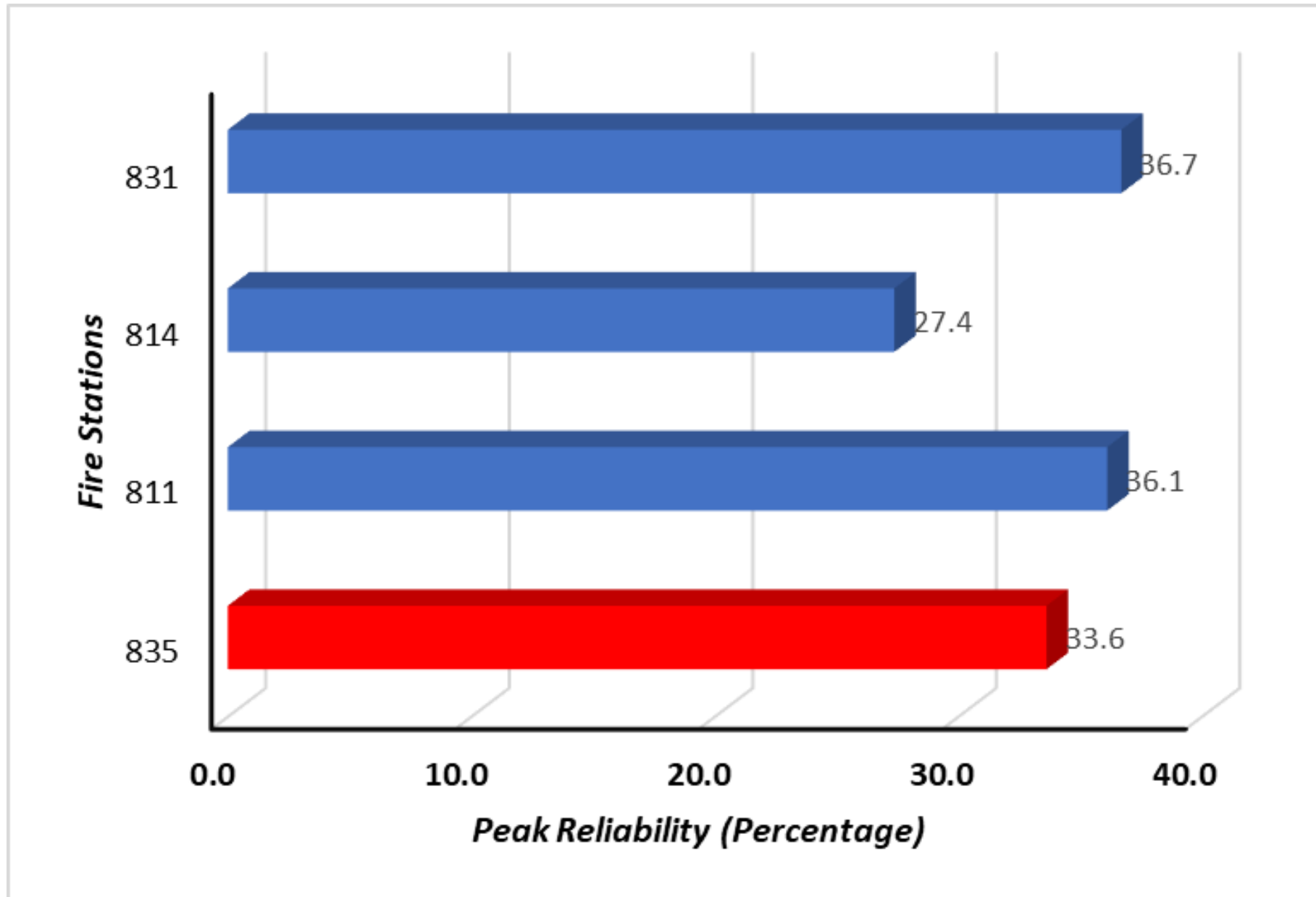


Station 835 – Extent of Change of Scenario Analysis



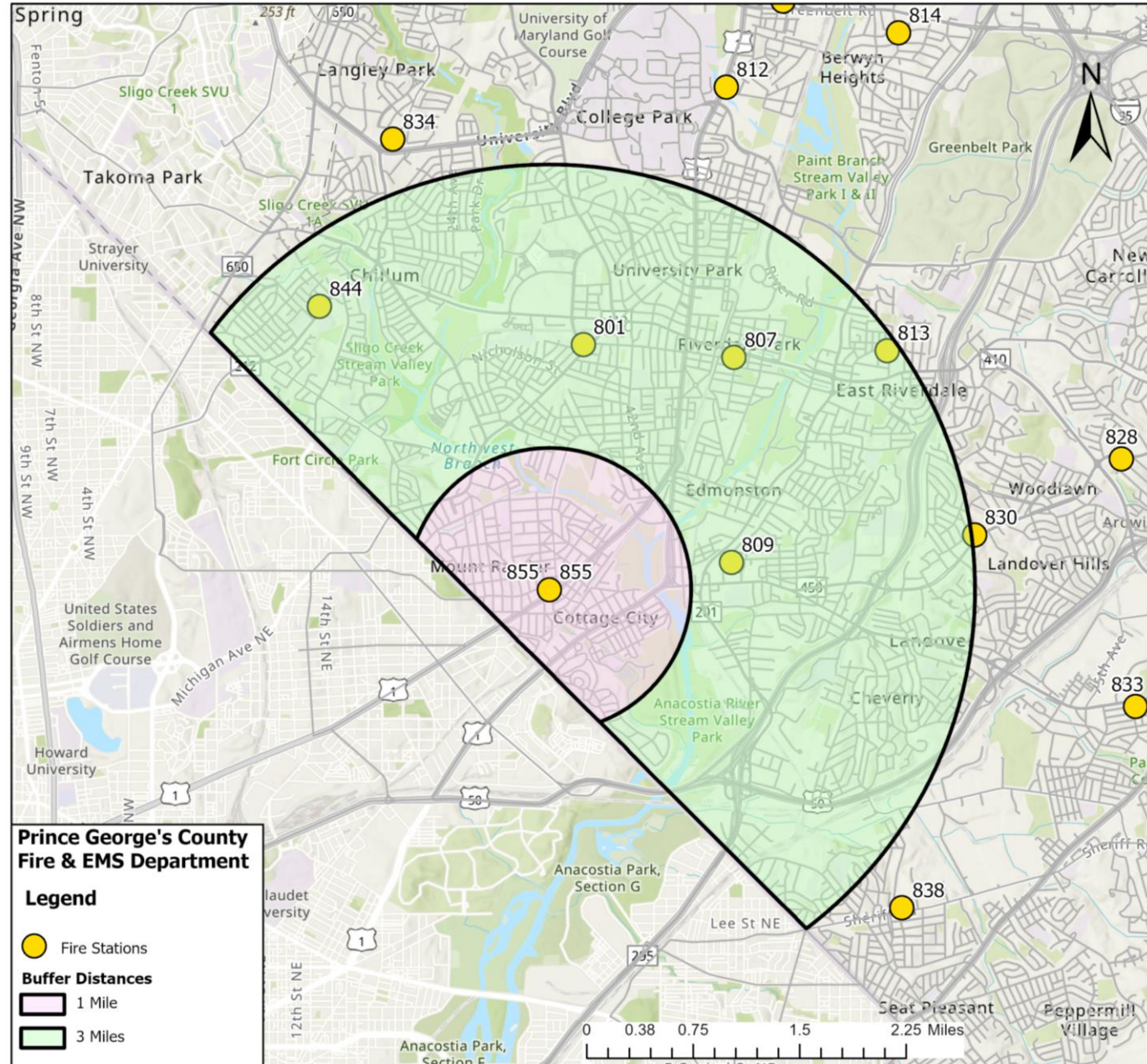


Station 835 – Peak Reliability Assessments



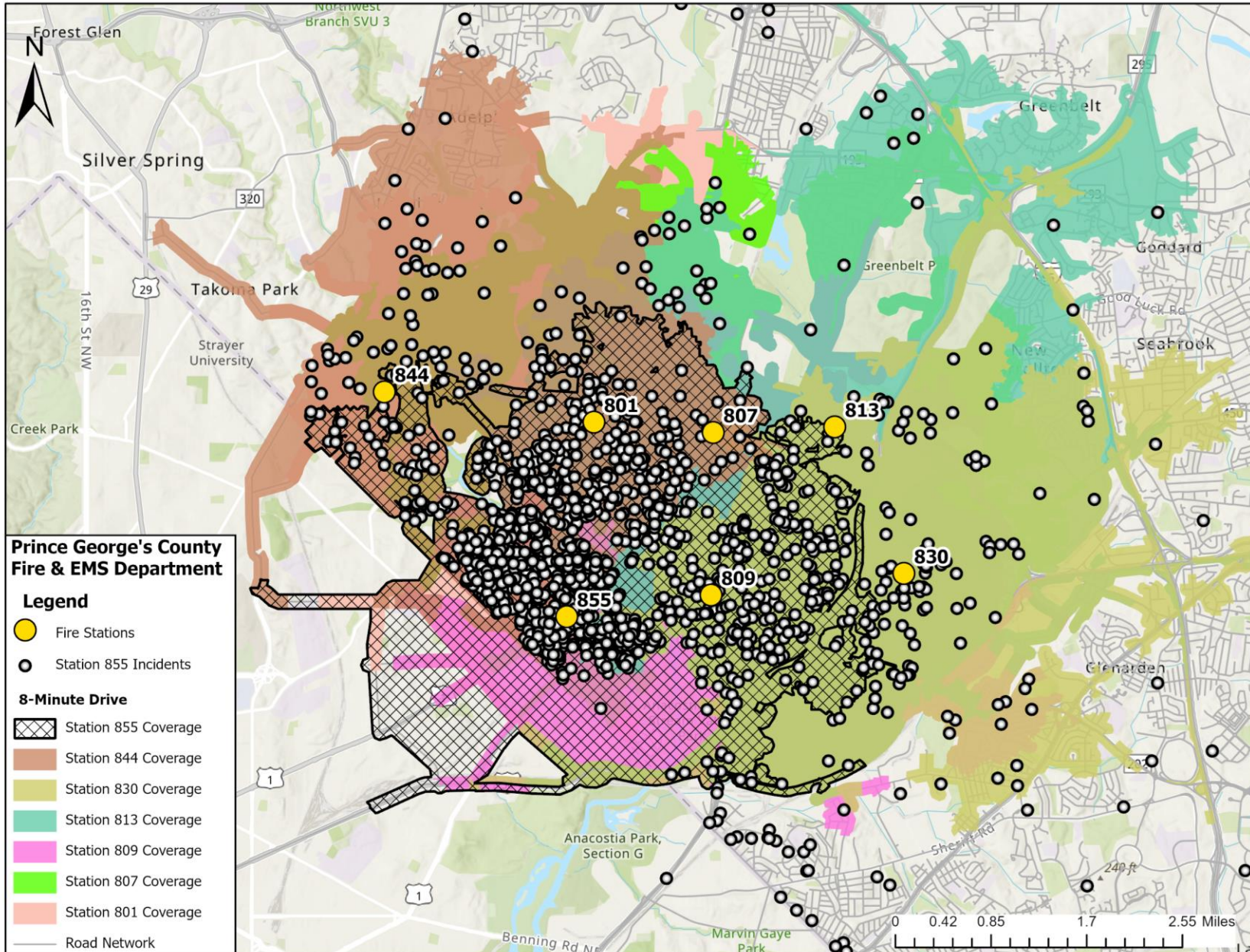


Station 855 – GPS Location with Nearby Stations



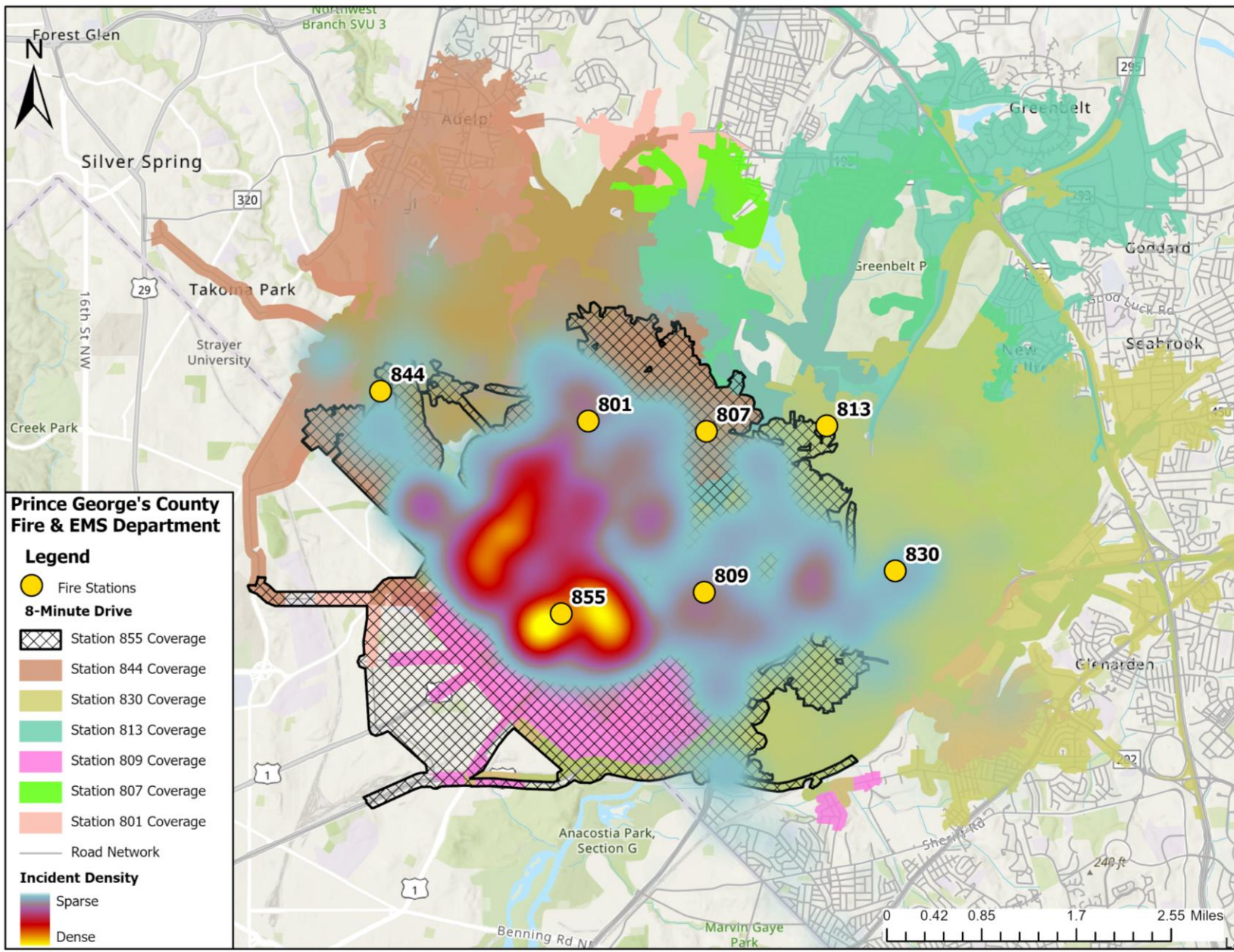


8-Minute Drive Coverage Area of the Stations





Station 855 – Incident Density





Station 855 – Scenario Analysis



BASELINE SCENARIO

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
801	92	3	1,649	2,007	1,164	401	112	872	289	6,589
807	11	1	190	401	74	26	11	103	13	830
809	121	11	1,036	1,763	915	242	109	1,040	204	5,441
813	0	0	49	89	10	0	4	29	2	183
830	126	13	4,574	2,728	733	370	274	2,018	160	10,996
844	96	6	5,060	2,120	582	273	175	748	130	9,190
855	66	12	977	1,540	1,315	216	86	662	457	5,331

EXCLUDE STATION 855 SCENARIO

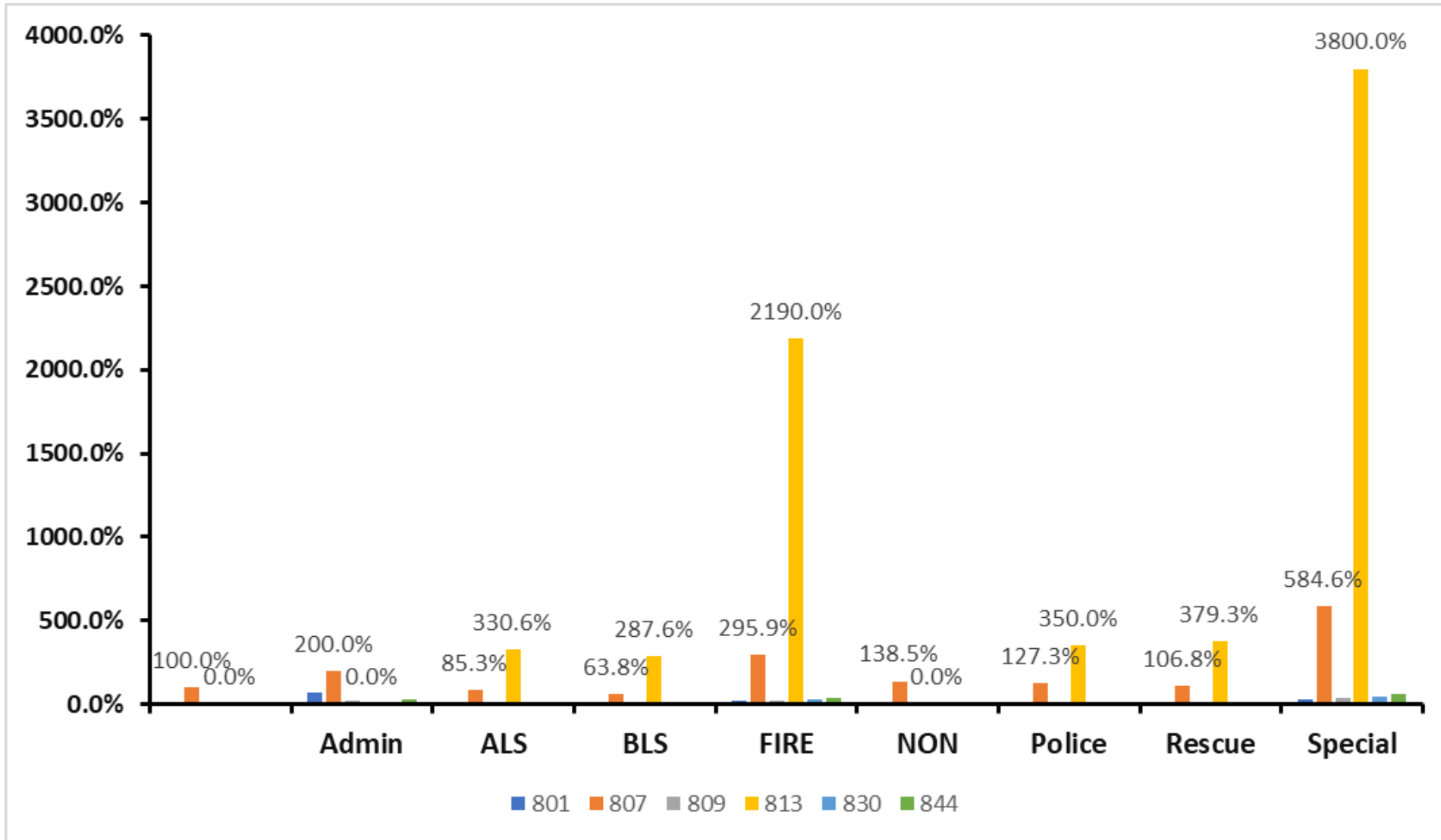
Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
801	103	5	1,811	2,263	1,384	437	126	982	366	7,477
807	22	3	352	657	293	62	25	213	89	1,716
809	132	13	1,198	2,019	1,134	278	123	1,150	280	6,327
813	11	2	211	345	229	36	18	139	78	1,069
830	137	15	4,736	2,988	952	406	290	2,130	236	11,890
844	107	8	5,227	2,376	801	309	189	858	206	10,081
855	0	0	0	0	0	0	0	0	0	0

POTENTIAL CHANGE

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
801	12.0%	66.7%	9.8%	12.8%	18.9%	9.0%	12.5%	12.6%	26.6%	13.5%
807	100.0%	200.0%	85.3%	63.8%	295.9%	138.5%	127.3%	106.8%	584.6%	106.7%
809	9.1%	18.2%	15.6%	14.5%	23.9%	14.9%	12.8%	10.6%	37.3%	16.3%
813	0.0%	0.0%	330.6%	287.6%	2190.0%	0.0%	350.0%	379.3%	3800.0%	484.2%
830	8.7%	15.4%	3.5%	9.5%	29.9%	9.7%	5.8%	5.6%	47.5%	8.1%
844	11.5%	33.3%	3.3%	12.1%	37.6%	13.2%	8.0%	14.7%	58.5%	9.7%

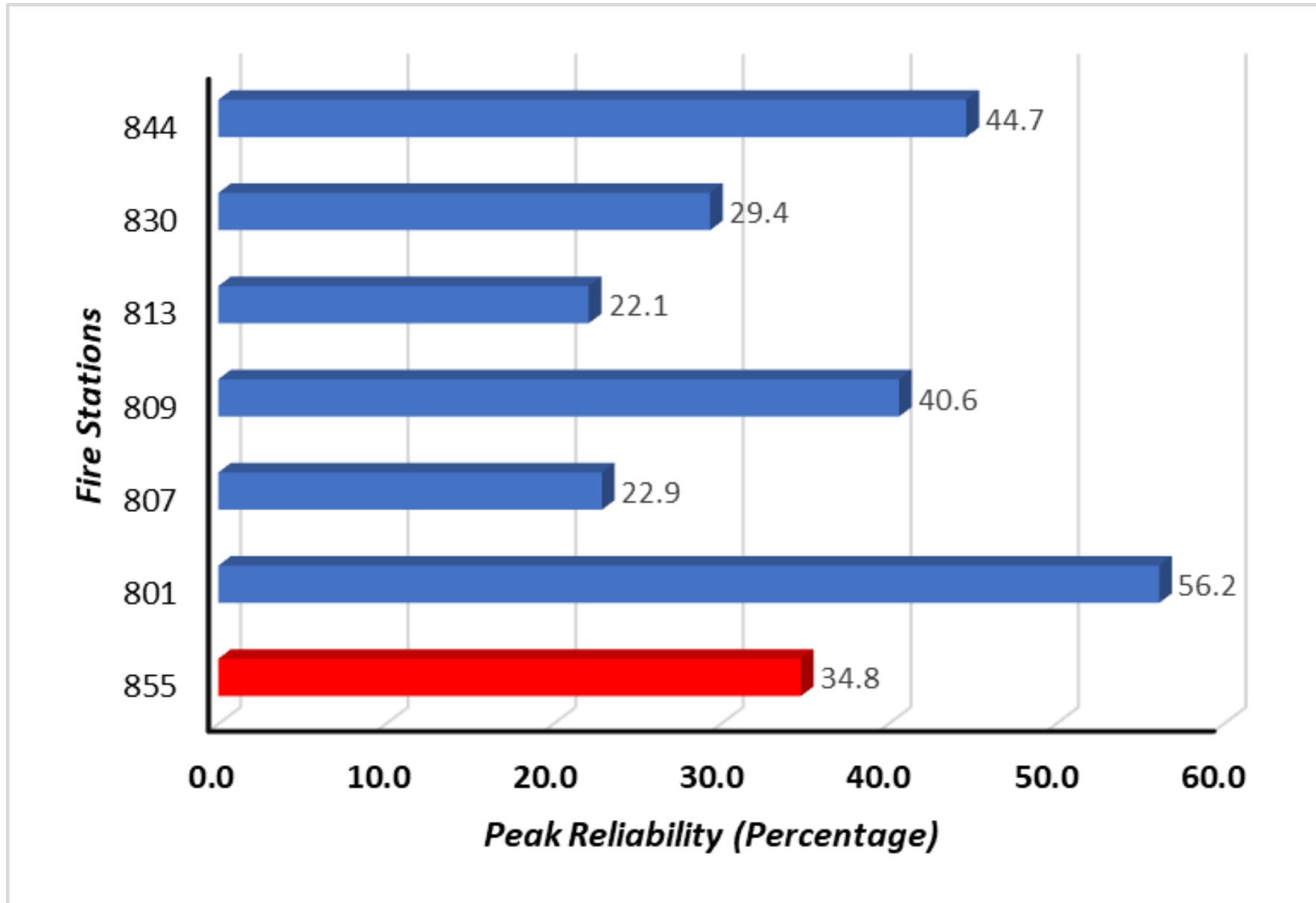


Station 855 – Extent of Change of Scenario Analysis



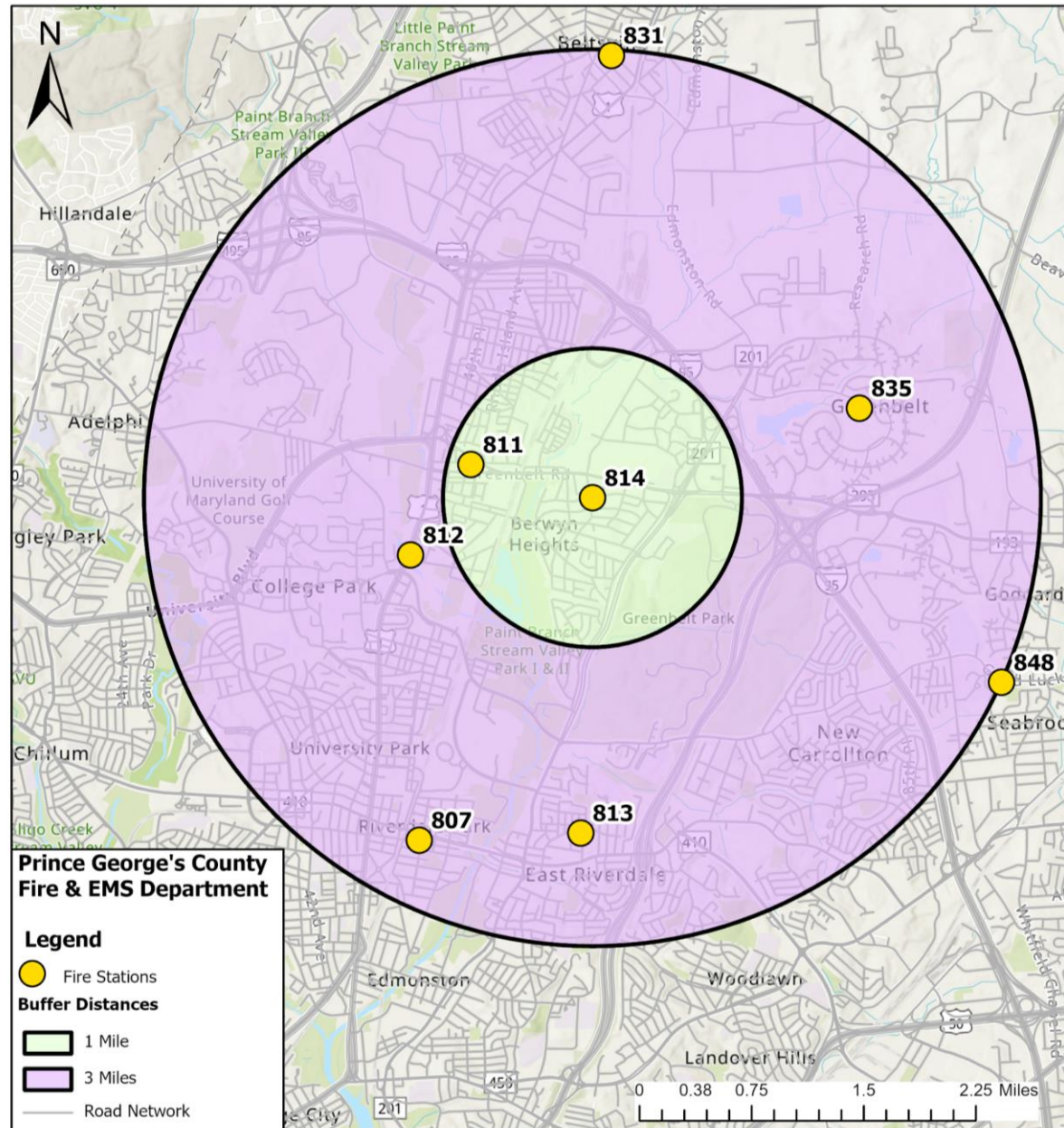


Station 855 – Peak Reliability Assessments



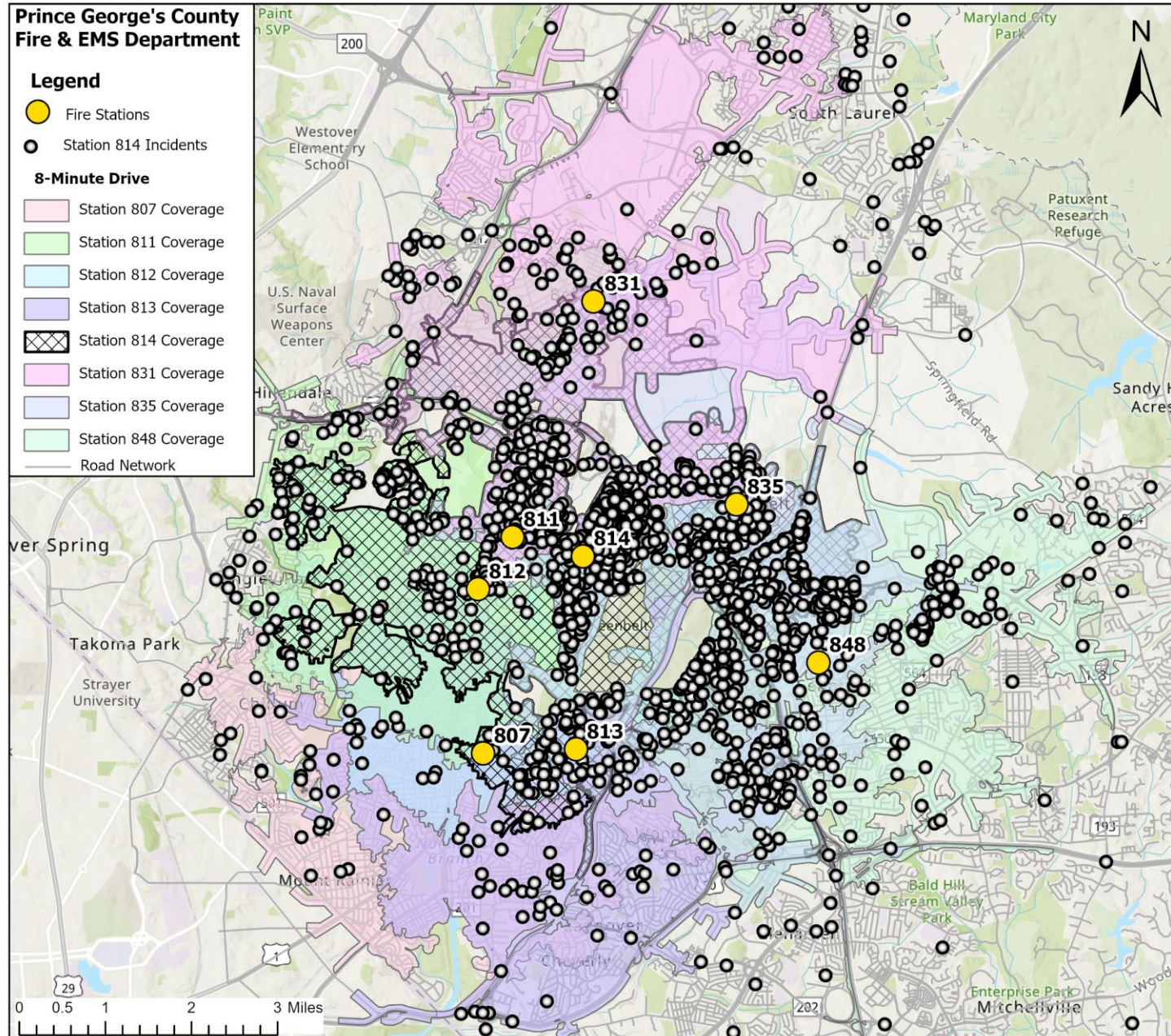


Station 814 - – GPS Location with Nearby Stations



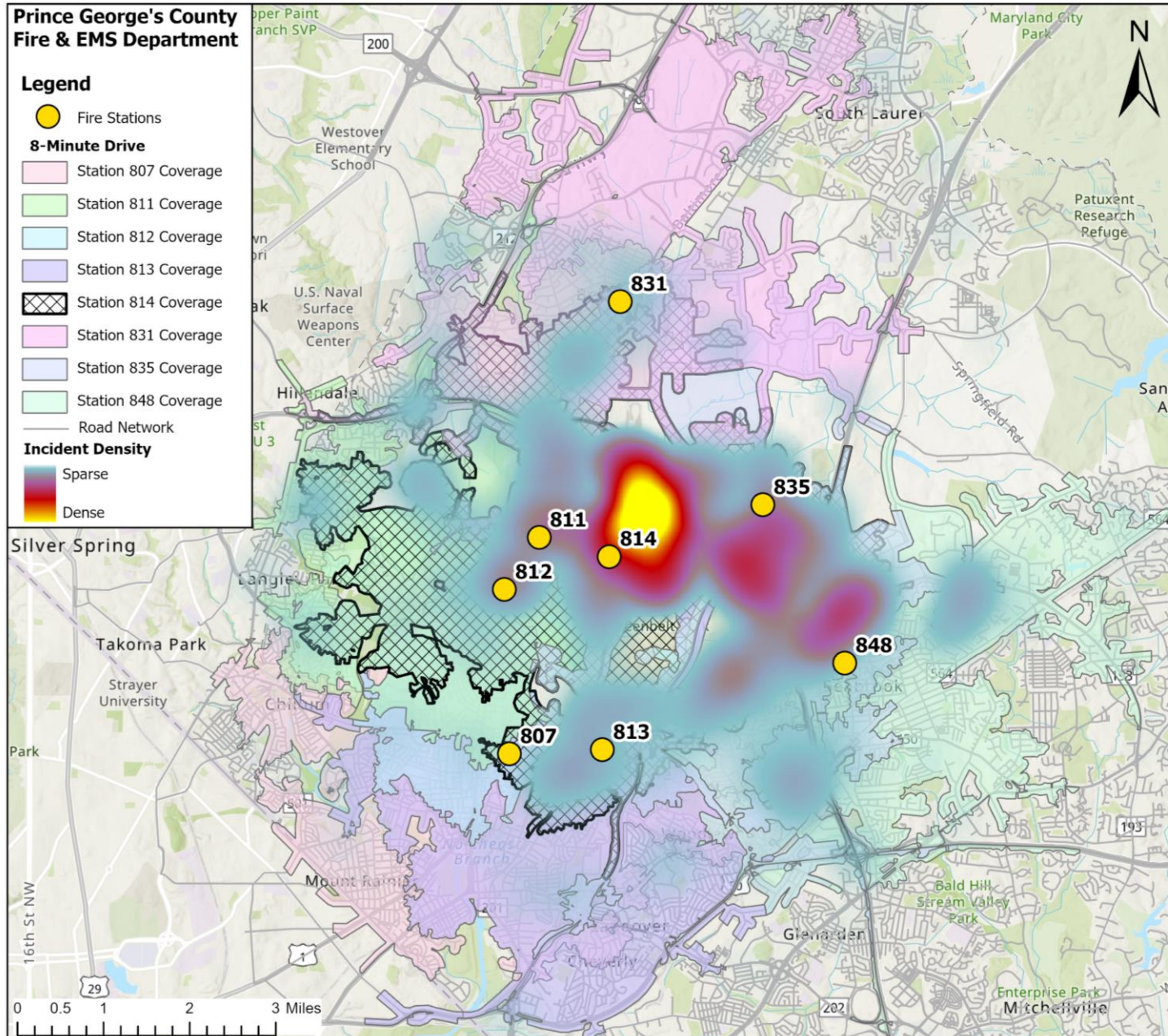


8-Minute Drive Coverage Area of the Stations





Station 814 – Incident Density





Station 814 – Scenario Analysis



BASELINE SCENARIO

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
807	11	1	190	401	74	26	11	103	13	830
811	35	6	450	1,038	263	78	38	540	77	2,525
812	84	11	2,346	1,689	1,088	239	99	619	266	6,441
813	0	0	49	89	10	0	4	29	2	183
814	49	5	993	2,093	1,123	230	63	1,410	301	6,267
831	104	4	1,141	1,908	926	245	74	1,065	199	5,666
835	90	16	1,897	458	616	201	79	1,356	175	4,885
848	99	13	3,360	705	724	396	123	1,225	139	6,784

EXCLUDE STATION 814 SCENARIO

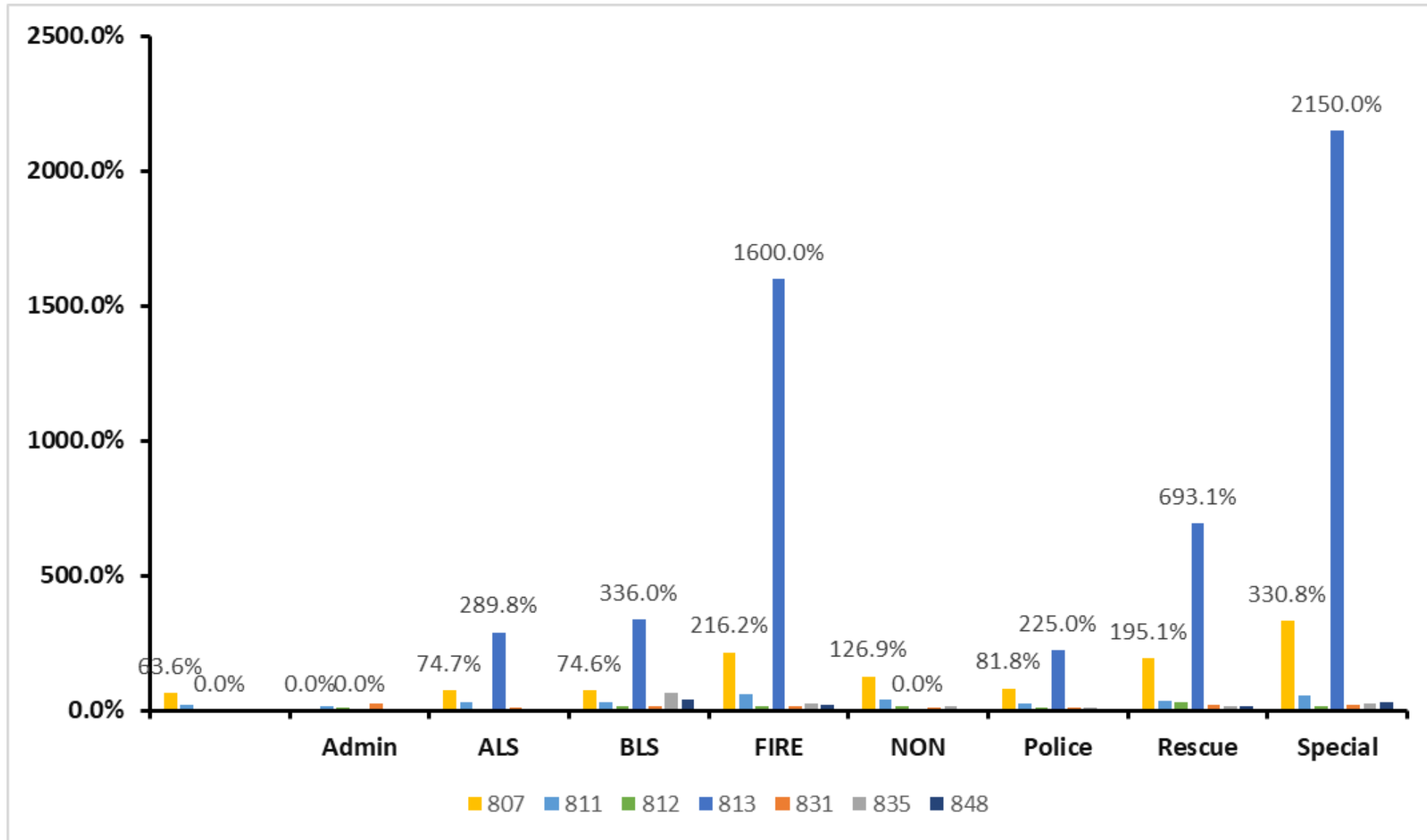
Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
807	18	1	332	700	234	59	20	304	56	1,724
811	42	7	592	1,337	423	111	47	741	120	3,420
812	91	12	2,488	1,988	1,251	272	108	820	309	7,339
813	7	0	191	388	170	33	13	230	45	1,077
814	0	0	0	0	0	0	0	0	0	
831	111	5	1,283	2,207	1,086	278	83	1,266	242	6,561
835	97	17	2,039	757	776	234	88	1,557	218	5,783
848	106	14	3,502	1,004	884	429	132	1,426	182	7,679

POTENTIAL CHANGE

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
807	63.6%	0.0%	74.7%	74.6%	216.2%	126.9%	81.8%	195.1%	330.8%	107.7%
811	20.0%	16.7%	31.6%	28.8%	60.8%	42.3%	23.7%	37.2%	55.8%	35.4%
812	8.3%	9.1%	6.1%	17.7%	15.0%	13.8%	9.1%	32.5%	16.2%	13.9%
813	0.0%	0.0%	289.8%	336.0%	1600.0%	0.0%	225.0%	693.1%	2150.0%	488.5%
831	6.7%	25.0%	12.4%	15.7%	17.3%	13.5%	12.2%	18.9%	21.6%	15.8%
835	7.8%	6.3%	7.5%	65.3%	26.0%	16.4%	11.4%	14.8%	24.6%	18.4%
848	7.1%	7.7%	4.2%	42.4%	22.1%	8.3%	7.3%	16.4%	30.9%	13.2%

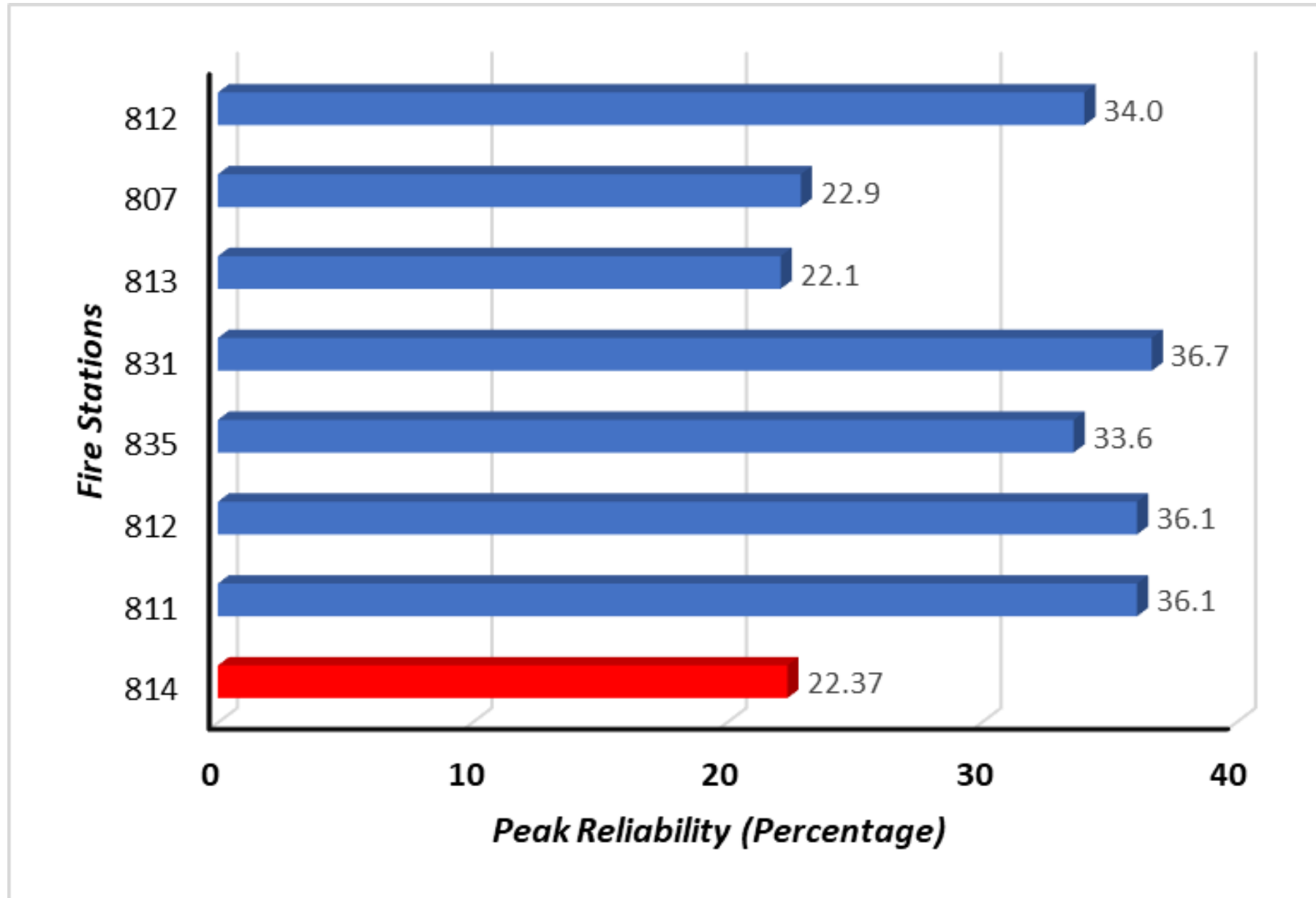


Station 814 – Extent of Change of Scenario Analysis



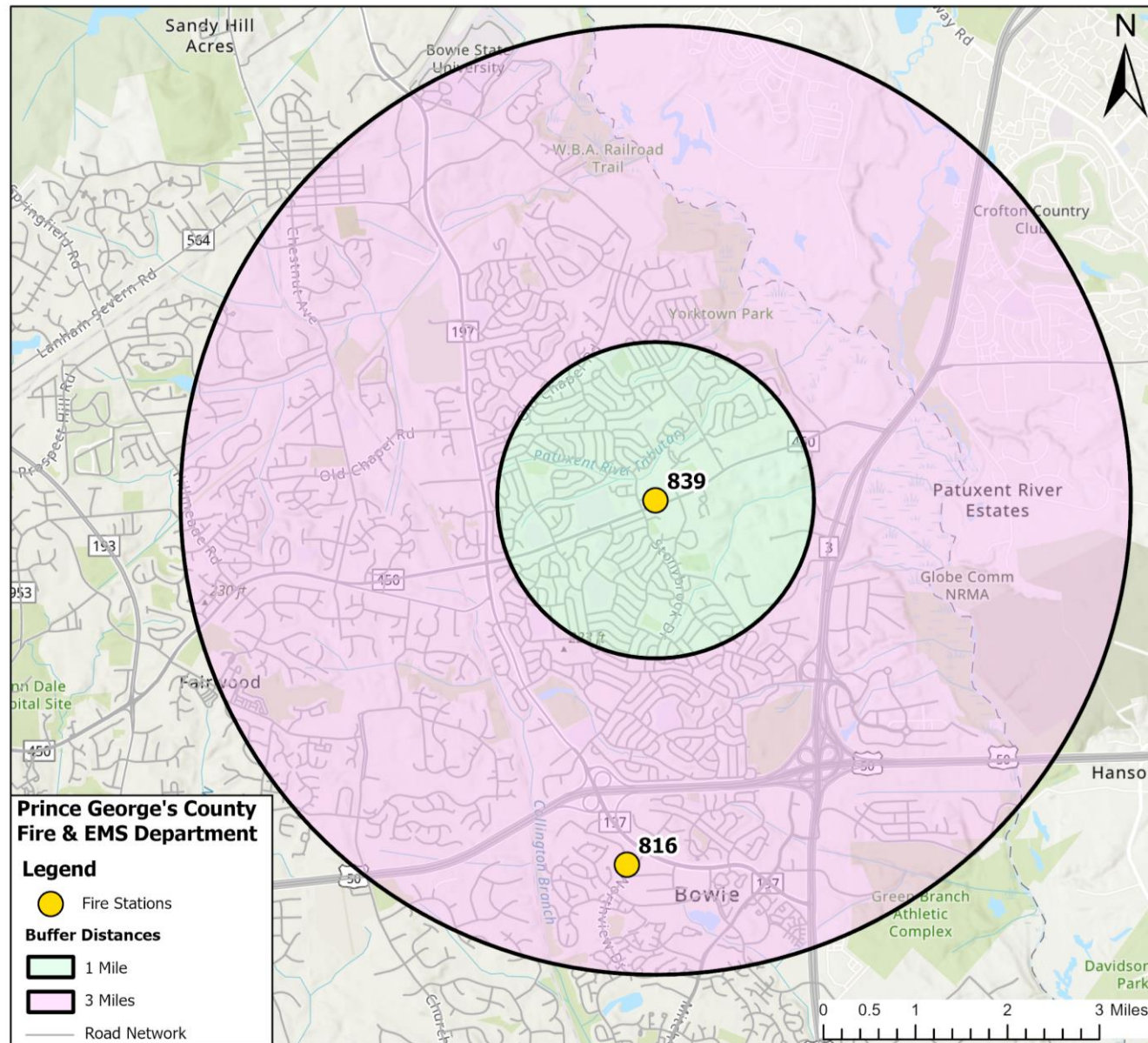


Station 814 – Peak Reliability Assessments



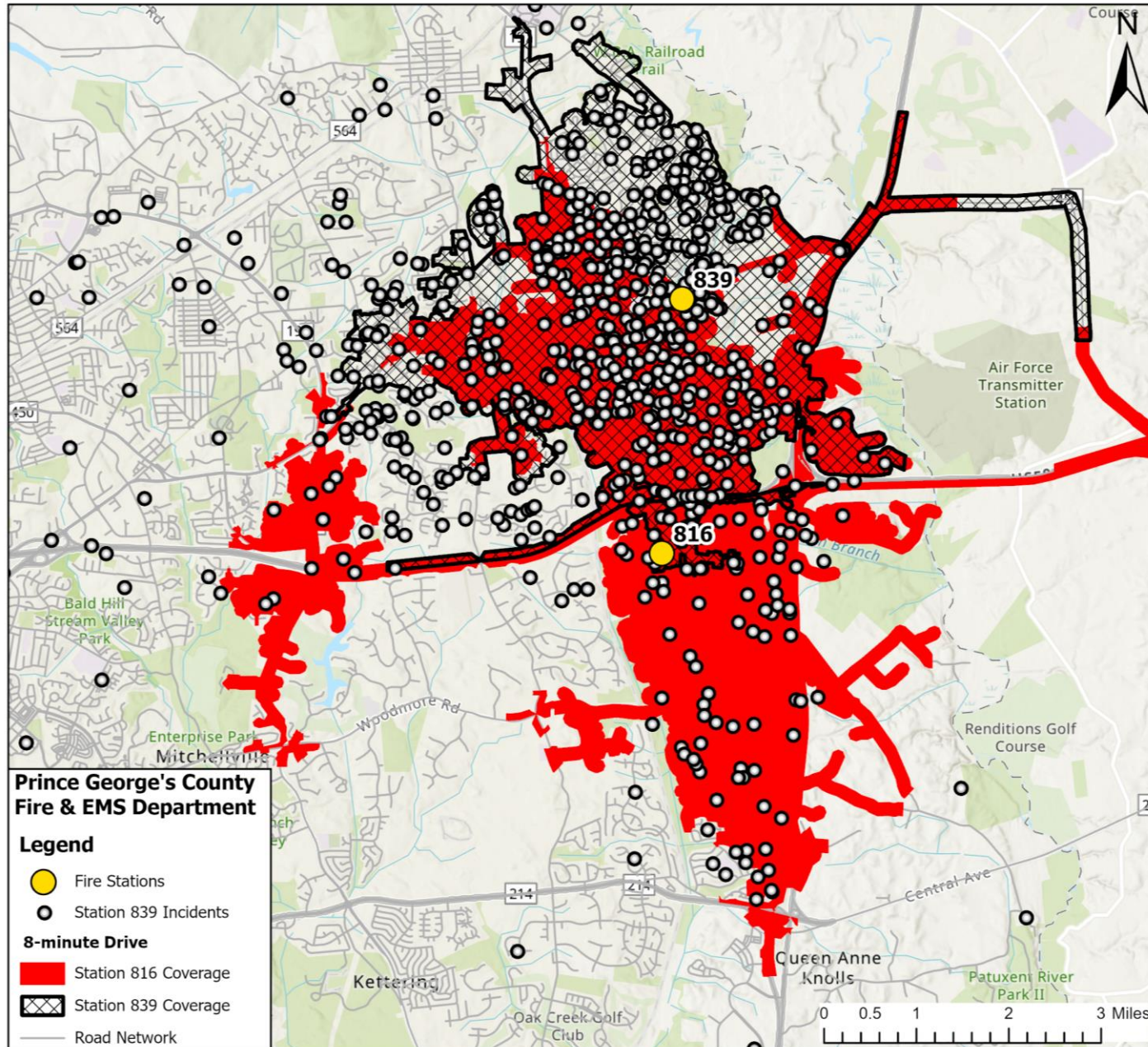


Station 839 – GPS Location with Nearby Station



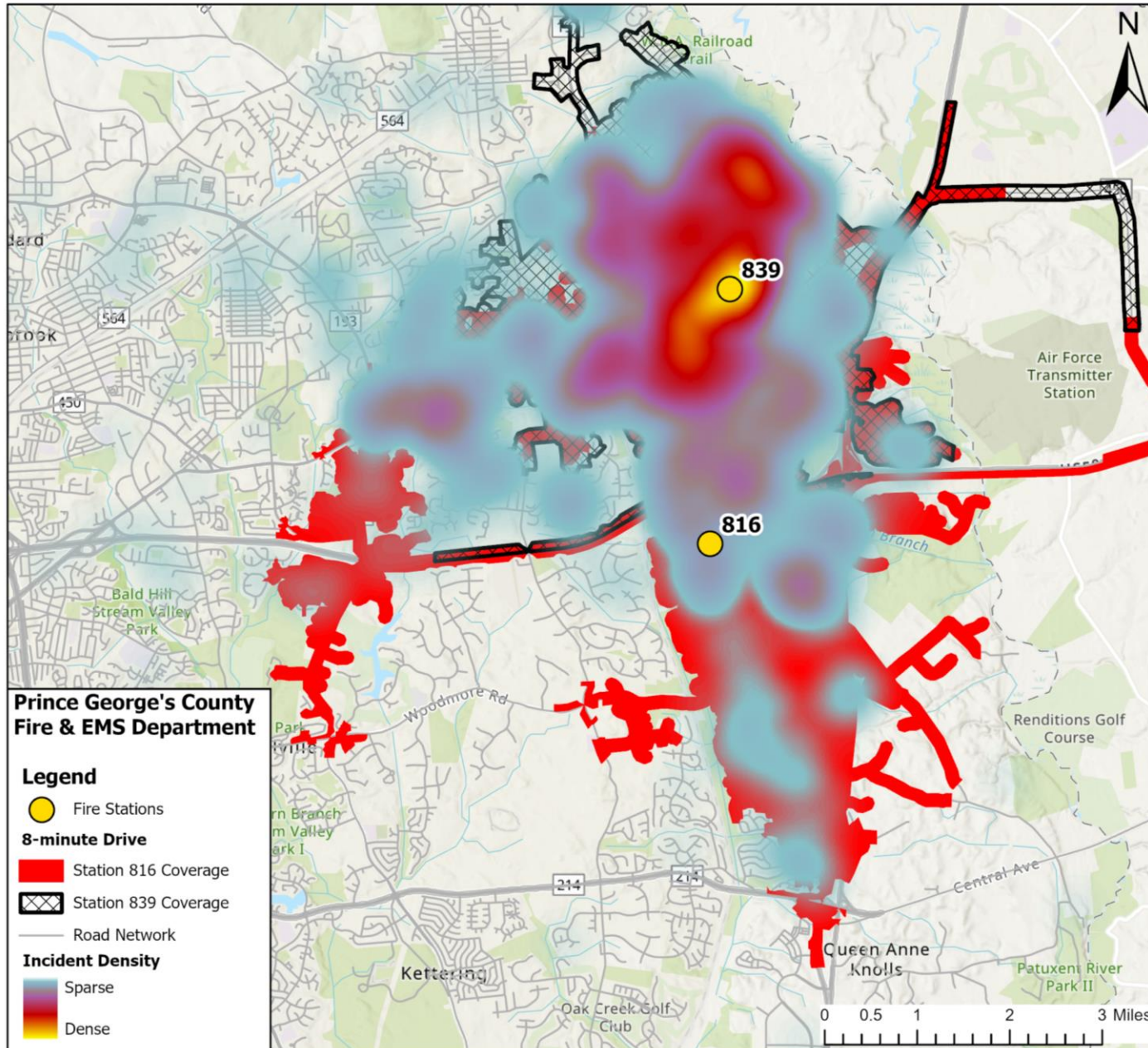


8-Minute Drive Coverage Area of the Stations





Station 839 – Incident Density





Station 839 – Scenario Analysis



BASELINE SCENARIO

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
816	69	0	2,591	678	959	349	49	872	265	5,832
839	34	4	494	663	179	136	22	177	39	1,748

EXCLUDE STATION 839 SCENARIO

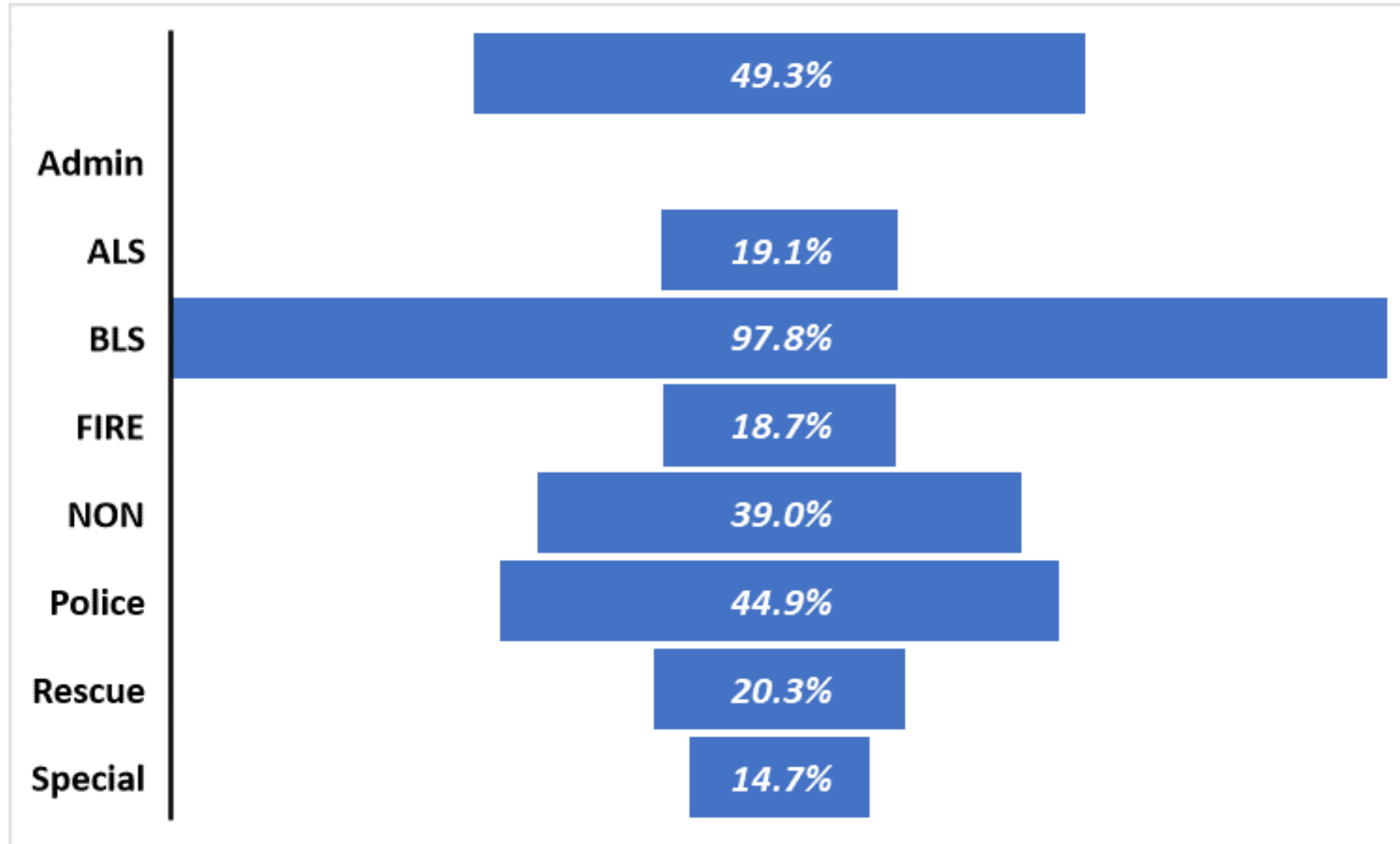
Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
816	103	4	3,085	1,341	1,138	485	71	1,049	304	7,580
839	0	0	0	0	0	0	0	0	0	0

POTENTIAL CHANGE

Station		Admin	ALS	BLS	FIRE	NON	Police	Rescue	Special	Total
816	49.3%	0	19.1%	97.8%	18.7%	39.0%	44.9%	20.3%	14.7%	30.0%

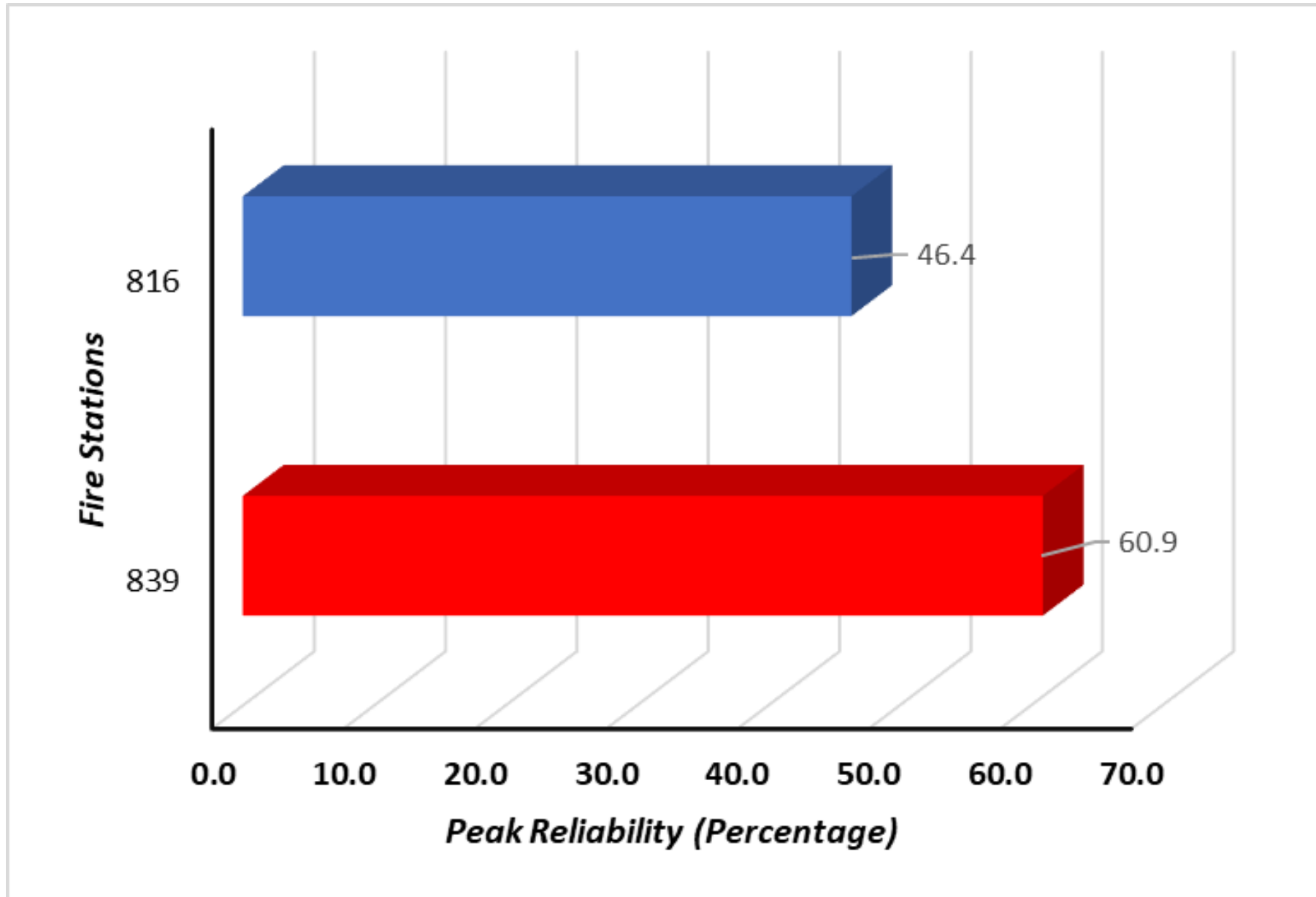


Station 839 – Extent of Change of Scenario Analysis





Station 839 – Peak Reliability Assessments





The End!

