GUIDELINES FOR LOCATING

THE NANTUCKET CENTRAL FIRE STATION

Prepared for the Board of Selectmen

Town and County of Nantucket, Massachusetts

John and Dolores Granito
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GUIDELINES FOR LOCATING THE NANTUCKET CENTRAL FIRE STATION

Background

Nantucket officials currently are considering options which may become available to enhance or replace entirely their Central Fire Station at its present location, or to relocate to a different Island site and have a new Central Station constructed there.

In addition to its current location at 132 Pleasant Street, possible alternate sites have been identified as:

1. The Police Station and Emergency Dispatch facility at 4 Fairgrounds Road;
2. The Cottage Hospital area at 57 Prospect Street;
3. The Sheriff's Office area at 205 Water Street;
4. The Wannacomet Water Co. area at Milestone Road

The purpose of this document is to provide Town Officials and Nantucket residents with information regarding the generally accepted criteria for station site selection, the type of central station necessary for adequate emergency service delivery to this Island, and the interrelationships among the character of Nantucket, the combination fire department, and the department's emergency response workload. This document is limited to information and observations only to station location.

As an autonomous Massachusetts Town and County, decisions regarding its fire department and its resources—certainly including stations—lie with Nantucket elected Town officials and the Administrator, plus the residents and taxpayers, with guidance provided by the Fire Chief. This document hopefully provides useful information and observations but recognizes that the most important aspects of the Central Station's future only can be determined locally, based on Island history, finances, conditions, growth projections, and master plan aspirations.

The Nantucket Fire Department

The Fire Department (NFD), actually by workload a "fire-rescue" department, has the following emergency response resource base reported for 2012:

Personnel: As full time employees, there are a Chief, Deputy Chief, Fire Prevention Officer, Fire Alarm Superintendent (all certified firefighters), and approximately 20 firefighter-emergency medical technicians. Four career firefighters and a Captain are assigned to each of four shifts, with a minimum manning level per shift of three. The department has approximately 25 call personnel-including "call officers". Approximately 16 call personnel respond only to emergency medical calls, and 9 cover fire calls, all when activated by pager.

Stations: 1 Central Headquarters Station on Pleasant Street
1 west end satellite station at Madaket

1 east end satellite station at Siasconset
1 garage type structure on Tuckernuck Island

Major Vehicles: 5 Pumpers
1 Aerial Ladder
3 Ambulances
1 Heavy Rescue
2 Water Tenders (tanker)

The NFD is organized in a cost-effective organizational structure which has the Chief, Deputy Chief, Fire Prevention Officer, and Alarm Superintendent, when available, each able to respond to emergencies as certified responders. Further, each of the four shifts has a Captain assigned as "station officer" and as shift commander, unless relieved by the Chief or Deputy Chief upon their arrival at the scene.

Initial response to a fire call can be as high as nine (five shift responders plus the four "senior staff"), or as low as three (minimum shift manning). The same "career" response numbers hold, as well, for serious or multiple casualty medical calls. If "call responders" are paged at the same time as the initial dispatch of career personnel, initial response numbers increase accordingly. Response numbers are increased as well whenever off-shift career personnel are paged and activated.

All on-duty personnel are based at the Central Station, thus the vehicles kept at the other stations must be staffed by call personnel responding from wherever they are to the nearest remote station, or to the Central Station.

2012 NFD Emergency Response Workload (Annual Report)

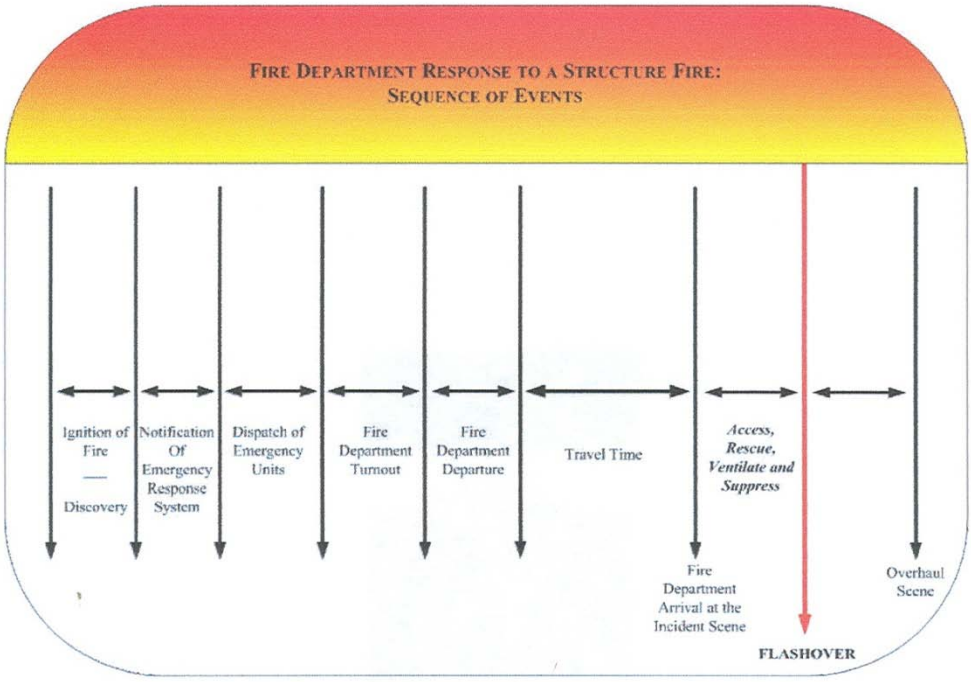
Fire Calls……..	41
Emergency Medical Calls ……..	1,255
Hazardous Condition Calls …….	324
Service Calls …….	358
Alarm Activation …….	990
Inspections ……	713*

*Considering the absence of mutual aid to the Island, and the relatively limited staffing, both comprehensive code enforcement and comprehensive fire and safety education are essential activities.

Timely Response

The preponderance of emergency medical calls and the absolute necessity for the quickest possible response to both them and fire calls necessitates locating the only "staffed" NFD station in the most advantageous location. National Standards for fire response and emergency medical service, including those promulgated by the AMA, the AHA, and NFPA,

call for an initial response within four minutes and a full response within eight minutes, for whatever type of response resource is dispatched to a particular emergency. Therefore, because time is of the essence, alarm handling, dispatch, station location, and certain station design features are critical elements in effective service delivery. The following diagram is used frequently to illustrate the advantages of shortening as many of the pre-arrival sequences as possible in order to begin quickly whatever type of action is necessary to protect life, property, and the environment.



The alarm-response sequence of events, the same for medical, rescue, and fire calls, points out the several sequential steps which, by careful planning can be shortened by local provisions, which are listed below.

NFD Central Station Site Selection Criteria (approximate priority order)

1. Suitability for co-location with existing public facility; add-on structure, separate structure, shared services & utilities

2. Distance and response time to target hazards and known high workload areas

3. Ready access to higher speed response routes: N/S & E/W

4. Site size and configuration, ramp length, drive-thru bays, single or multi story, nature of neighborhood and close-by structures, potential impacts, antennae tower

5. Immediate traffic conditions, congested intersections, blockages, one way streets, effect of any necessary traffic control signal for exiting of emergency vehicles

6. Sight lines for exiting and entering; speed of normal traffic near site exit and entrance

7. Proximity to effects of possible natural or manmade large incidents, flooding, wind damage, power loss, major accidents

8. Topography of general area, needed site grading and compaction

9. Competition for projected site

10. Value and disposition of existing site

11. Cost estimates, funding possibilities, grants

12. Neighborhood objection to removing "their" station

13. Time delay in opening the station

14. Need for temporary station

In considering these criteria, it sometimes is helpful to use a score sheet for each of the alternate locations. Following is an actual example of such a score sheet, used by a city which needed to construct two new stations. Instructions for use are:

A. For each possible fire station location, score each of the criterion as 1 – 5 with 5 being the best score. Duplicate scores are allowed.

B. On the weighted score sheet: multiply each raw score by the agreed weight, 1, or 2, or ?, and record the weighted score. Add together the weighted scores for each potential site. A higher final score is better. (This step recognizes that, while all variables are important, some are more crucial than others and should carry more weight in the decision process.)

C. Using the cumulative weighted score for each of the sites, rank them.

CITY OF PUBLIC SAFETY SYSTEM PROJECT

WEIGHTED SCORE

			POTENTIAL SITES (SEE MAPS)	SUITABILITY FOR COMMUNICATION CENTER (STATION #1 ONLY)	EFFECTS OF NATURAL AND MANMADE DISASTERS	TRAFFIC CONDITIONS	STREET ACCESS AND SIGHT LINES	ACCESS TO HIGHER SPEED ROUTE(S)	DRIVE THRU AND DRIVE BY CAPABILITIES	SITE SIZE AND CONFIGURATION	TOPOGRAPHY OF GENERAL AREA	SITE GRADES	UTILITIES	NATURE OF NEIGHBORHOOD, POTENTIAL IMPACTS					ADDITIVE SCORE (HIGHER IS GENERALLY BETTER)	RECOMMENDED RATING OF SITES (1 IS HIGHEST)
														NOISE	LIGHT	GLARE	TRAFFIC	SCALE		
WEIGHTING FACTOR				2	2	1.5	2	1	2	1.5	1	1	1	1	1	1	1	1		
STATION 1	15TH NEAR 12TH SW	1A	8	10	6	6	4	10	7.5	4	4	4	3	4	4	5	5	84.5	2
	15TH & 5TH SW	1B	4	6	7.5	8	5	10	7.5	5	3	4	4	5	5	5	5	84	3
	15TH & MERIDIAN	1C	4	6	3	6	5	10	7.5	5	4	4	5	5	5	4	5	78.5	4
	15TH & 3RD SE	1D	10	8	7.5	8	5	10	7.5	4	5	4	4	4	4	5	4	90	1
STATION 3	MERIDIAN & 5TH	3A		8	7.5	10	3	10	7.5	5	5	4	5	5	5	5	5	85	1
	2ND & 5TH NW CORN.	3B		8	7.5	10	3	10	7.5	5	2	4	5	5	5	5	5	82	2
	2ND & 5TH NE CORN.	3C		8	6	8	3	6	4.5	5	2	4	4	4	4	4	5	67.5	4
	2ND NEAR 4TH NE	3D		6	6	10	3	8	6	5	5	4	3	3	3	3	3	68	3

Computerized Response Mapping for Nantucket

Computer response mapping is provided to illustrate the road distances reached by responding apparatus traveling from the current NFD Central Fire Station and four additional, possible sites at average speeds of 25 mph, 30 mph, and 40 mph. These speeds reflect seasonal traffic conditions.

The following technical information provides further understanding of the computer-generated response maps:

The computer maps are based on digitized representations of streets and roads within the Island of Nantucket area as prepared for the United States Census Bureau ("Tiger Maps").

In some cases, there may be newer built out areas not covered in the Census material. In the Tiger Map system, the original computerization divided all streets and roads into segments of specific lengths (called "links"), tied together by "nodes". The errors are not significant in this Nantucket analysis of fire coverage and distance/time maps, because the distance and time segments typically used in the mapping are relatively short, with many intersecting streets, and normally coincide quite closely with Tiger Map links. Small errors may occur, and generally happen randomly and across the entire mapping area. The effect is that, while all mapping distances and times are approximate, and based on our experience with many applications, the impacts of any discrepancies which might occur appear insignificant.

- The U.S. Census Feature Classification Code describes street and road characteristics, and a mathematical matrix (ArcView Network Analyst) enables a calculation for driving time on each segment of a road-street network. For example, a primary, limited access road indicates 45 mph. A secondary connecting road indicates 35 mph, and local neighborhood roads indicate 25 mph.

  Considering local street speed limits, the size and weight of fire vehicles, and accident liability considerations, careful review of response speed limits is essential. Very little research, if any, demonstrates that a few mph results in significantly less fire loss.

- NFPA Standard 1710 ("Standard for the Organization and Deployment of Fire Suppression Operation, Emergency Medical Operations, and Special Operations to the Public by Substantially Career Fire Departments", 2010 edition) calls for a road travel time of no more than 240 seconds for the fire due engine company and four responders, or ambulance for EMS, plus the entire first alarm fire assignment (approximately 15 personnel minimum) within 480 seconds, to 90% of annual calls.

Methodology Used for the Nantucket Mapping

On a base map of the island, nine Emergency Response Locations (ERL) were identified. The numbering is clockwise and has no effect on the mapping results.

The following sites (Fire Department, Hospital, Police Department, Sheriff, and Water Works) were then located. From each of these five sites response distances reached were covered in two, four, six, eight, ten, and greater than 10 minutes, at averages of 25 mph, 30 mph, and 40 mph. The following chart shows the percent of links covered for each of those times, for each of the five sites.

The US Tiger files for the Nantucket base map contain 3239 road links, which are surrogate indicators of the Island's total roadway system.

A Summary of the Percentage of Links Covered by Each of the Five Sites

Specific Location	NFD		Hospital		NPD		Sheriff		WWCO	
Distance to farthest point in miles	12.36		13.01		12.37		13.40		12.20	
Area Covered	# links	percent	# links	percent	# links	percent	# links	percent	# links	percent
25mph 2 min	348	10.7	489	15.1	231	7.1	540	16.7	149	4.6
4 min	1057	32.6	1075	33.2	980	31.3	928	28.7	842	26.0
6 min	1577	48.7	1528	47.2	1529	47.2	1263	39.0	1471	45.4
8 min	1764	54.5	1822	56.3	1734	53.5	1701	52.5	1716	53.0
10 min	2077	64.1	1993	61.5	2047	63.2	1965	60.7	2015	62.2
30mph 2 min	484	14.9	638	19.7	349	10.8	619	19.1	227	7.0
4 min	1318	40.7	1246	38.5	1279	39.5	1080	33.3	1107	34.2
6 min	1698	52.4	1700	52.5	1676	51.7	1523	47.0	1658	51.2
8 min	2034	62.8	1968	60.8	1993	61.5	1943	60.0	1948	60.1
10 min	2391	73.8	2245	69.3	2367	73.1	2192	67.7	2393	73.9
40mph 2 min	792	24.5	849	26.2	699	21.6	783	24.2	474	14.6
4 min	1627	50.2	1580	48.8	1587	49.0	1332	41.1	1554	48.0
6 min	2034	62.8	1968	60.8	1993	61.5	1943	60.0	1948	60.1
8 min	2507	77.4	2381	73.5	2475	76.4	2295	70.9	2492	76.9
10 min	3027	93.5	2835	87.5	2995	92.5	2738	84.5	3060	94.5

In the above table, red indicates the highest percent of links covered from that specific location at the indicated average speed, at the time critical 4 minute mark. A higher percent indicates more links covered.

- The entire section of links above #4 Emergency Response Location (ERL) is included in the total number of links. No site can reach that general location in less than ten minutes.

- The low initial percentages from the Water Works location likely are due to the several road links needed to access Milestone Road.

- The zero to two minute percentage from the Sheriff's Office location is created by the high number of very short links in the immediate vicinity-the downtown area. However, it generally is safer, tactically, to respond into a target fire zone than to be stationed within it.

- The Police Department site and the current NFD sites offer similar coverage.

The following addresses were used for the response target locations (ERL):

#1 ERL - 26 Gosnold Road
#2 ERL - 1 Henry Street
#3 ERL - 12 North Road
#4 ERL - 120 Wauwinet Road
#5 ERL - 115 Baxter Road
#6 ERL - 27 Wanoma Way
#7 ERL - 166 Surfside Road
#8 ERL - 326 Madaket Road
#9 ERL - 137 Eel Point Road

Computer response maps are at the end of this paper.

Fire Station Features Favoring Quick Response

1. Location near fast response routes

2. Tactically safe and non-locking traffic position

3. Full-length ramp with clear sight lines

4. Spacious apparatus bay areas with room for protective gear

5. Frontline, nearest doors, consisting of the "jumped" vehicles

6. Adequate view of outside conditions

7. Day rooms and bunk rooms close to apparatus bays—flat floor

8. Inside control of exterior street traffic signal

9. Reachable controls for overhead doors

10. Loud and clear alarm and dispatch – Rip and Run

Observations

Three of the five possible locations appear, “on paper”, to be more advantageous.

Typically, converting older smaller stations to contemporary larger stations meeting code requirements, functional design characteristics, and sprinkler protection proves both costly and lengthy. Additionally, adequate and safe temporary quarters compensating for any tear-down is most troublesome.

Close proximity to the emergency communications and dispatch facility is operationally useful.

Close proximity to another “open 24/7” facility is useful for fire stations which frequently have all personnel responding out-of-the building.

Close proximity to another public safety agency encourages jointly used training rooms and programs such as A.E.D. use, and responding to active-shooter and bomb calls.

Dolores Granito

643 East Lake Road
Penn Yan, NY 14527
Phone: (315) 536-3439
Fax (315) 536-6595

e-mail: granitomapping@AOL.com

2961 Bowsprit Lane
St. James City, FL 33956
Phone (239) 283-2438
Fax: (239) 283-2464

Computer Mapping services using Topologically Integrated Geographic encoding and Referencing Digital Map Data for response station locations, initial and sustained attack response times, ISO evaluation, Emergency Medical Services, Technical Rescue and Hazardous Material Response for a variety of clients including continuing service to MMA Management Consulting Group, Inc. of Boston, Neville Associates of California, Ross Architects of Voorheesville, NY, Illinois Fire Chiefs Association, Thorne Associates in Idaho Falls, and Hughes Associates, Inc. of Baltimore. Computer mapping services to Fire-Rescue departments (listed below), including D.O.E. Hanford, Rocky Flats, Los Alamos, Argonne National Laboratories (East), Idaho National Labs, and the Port of New Orleans.

Description of my work: Computer mapping for fire, rescue, and EMS station location and response mapping for fire departments and/or for consulting firms. This may include ISO requirements, NFPA 1710, volunteer home response to stations and NFPA 1720, full first alarm assignments; station covering; automatic mutual aid; new station locations; effects of station closings; station consolidations, etc.

Mapping completed in the following locations:

In California – San Mateo County
In Colorado – Greater Brighton
In Connecticut – Newington, Norwalk
In Florida – Cape Coral, Jupiter, Miami, Lehigh Acres, Pine Island
In Hawaii – Island of Oahu-Honolulu County
In Illinois – Argonne, Bloomington, Bourbonnais, Bradley, Carbondale, Coal City, Columbia, Crystal Lake, Dupage-Cook County, E. Dundee, Elwood, Franklin Park,Manhattan, New Lenox, Plainfield, Pleasantview, St. Charles, University of Illinois at Urbana/Champaign, Warrenville, Winfield
In Iowa – Sioux City
In Louisiana– New Orleans
In Maine – S. Portland
In Massachusetts – Acushnet, Easton, Harwich, Ipswich, Scituate, Seekonk, Shelton, W. Boylston, Yarmouth
In Nebraska – N. Platte
In New Jersey – Cherry Hill
In New Mexico – Los Alamos, White Rock
In New York – Armonk, Buffalo, Croton, Eastchester, Fire Island, Geneva, Hauppauge, Melville, Penfield, Perinton, Portchester, Queensbury, Rochester, Town of Barrington, Town of Brighton, Town of Colonie, W. Brighton, Woodbury
In Ohio – Clearcreek, City of Springboro
In Oklahoma – Sapulpa
In Rhode Island – Cumberland, E. Providence
In Texas – Huntsville, Georgetown
In Utah – Provo
In Washington –Hanford, Puyallup, Trendwest (a new resort area), Pacific Northwest National Laboratory

JOHN A. GRANITO

643 E. LAKE ROAD
PENN YAN, NY 14527
Phone (315) 536-3439
FAX (315) 536-6595

e-mail: granitofla@AOL.com

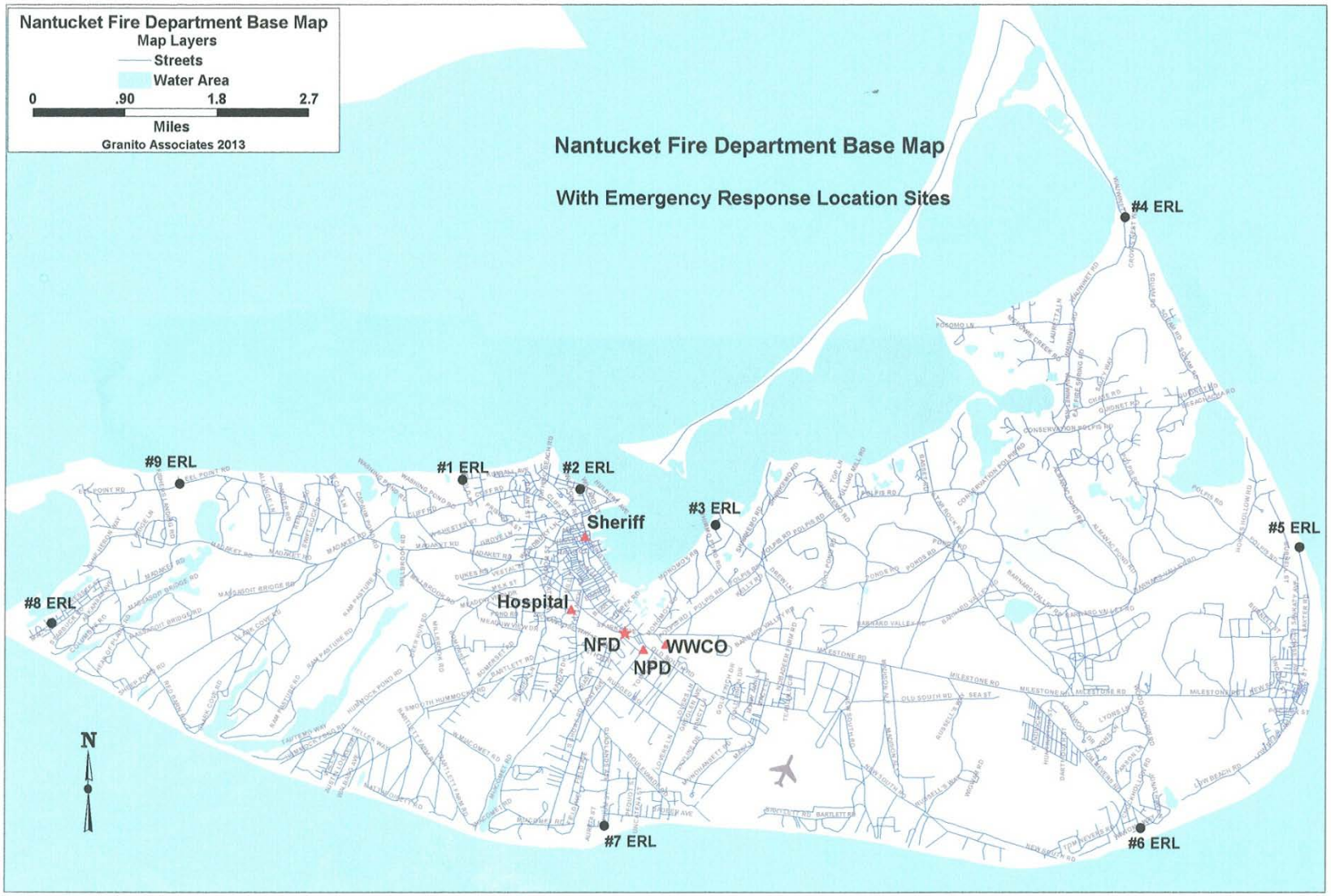
2961 BOWSPRIT LANE
ST. JAMES CITY, FL 33956
Phone (239) 283-2438
FAX (239) 283-2464

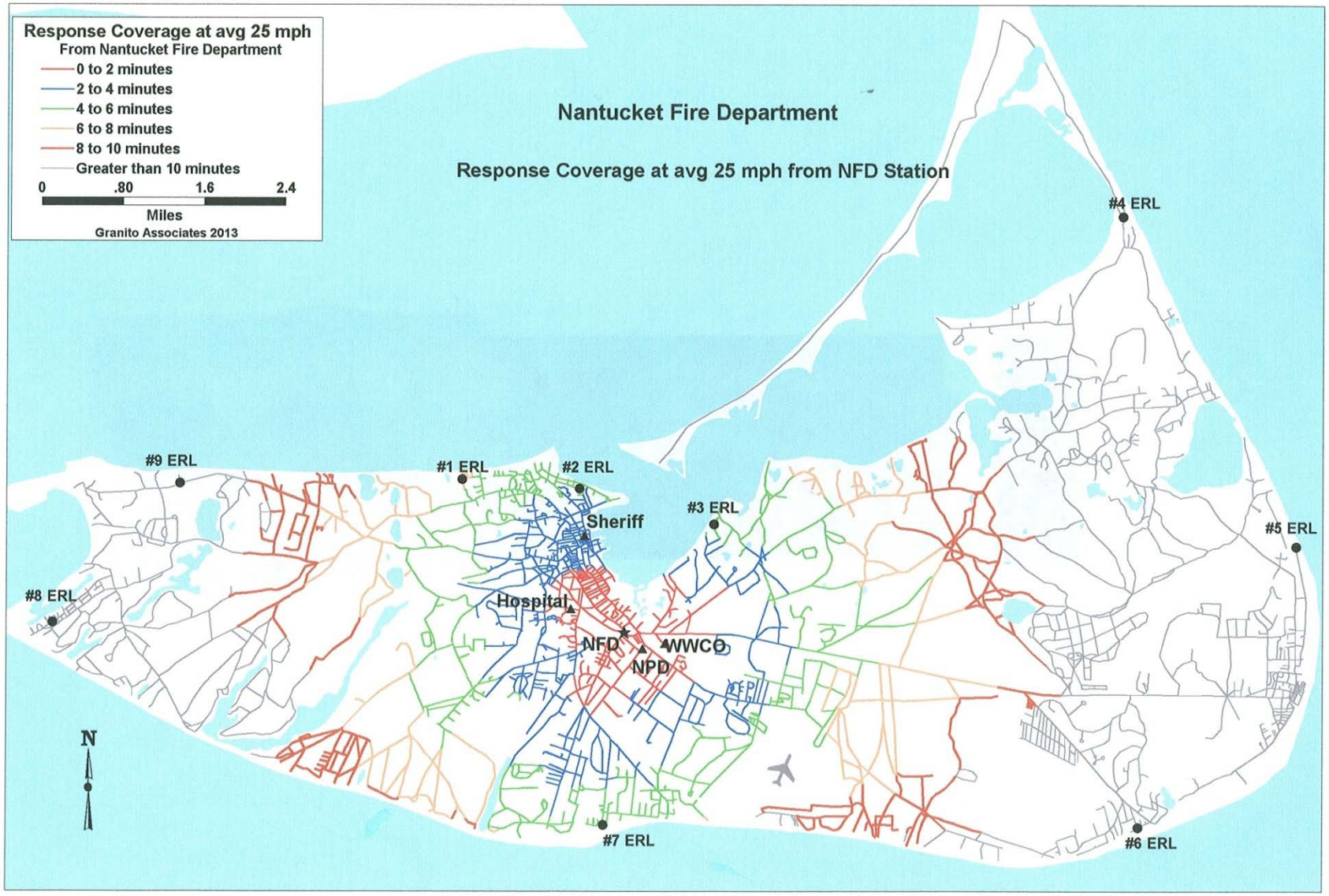
John Granito is a consultant in fire-rescue service and emergency management. He has conducted numerous municipal studies for HAI, and studies for Thorne Assoc., MMACGBoston, and Management Partners Inc. Additionally, for HAI and Thorne Assoc. at DOE facilities at Hanford, Rocky Flats, Idaho, Los Alamos, Argonne, Brookhaven, & PNNL, plus several DOD and related military sites in the US and abroad. He was post-Katrina consultant for deployment and response to the City of New Orleans Fire Department, assigned by the U.S. Fire Administration. John began serving as safety and emergency management consultant to the Port of New Orleans in 1992, and has been consultant to the IBM corporation, the Strategic Air Command, the Agency for International Development, the International City Management Association, the National Emergency Management Institute, the National Fire Protection Association, the Department of Army, NASA, the Federal Emergency Management Agency, the Public Entity Risk Institute, several airports, the US Fire Administration, and individually or as a leading team member at more than 450 municipal fire-rescue departments. Larger U.S. departments studied through 2012 include Boston, Buffalo, Louisville, Cambridge, New Orleans, Providence, Rochester, Pittsburgh, Charleston, Jersey City, Miami, Sioux City, Topeka, Honolulu, Cape Coral, Phoenix (2012), Riverside County, and Chicago. He has been technical advisor to several studies of fire department performance, including the Centaur and FireDAP projects. In June 2006, he began serving as technical advisor to the NIST, Worcester Polytechnic Institute, IAFC, IAFF multi-year study of fireground operational performance, released in 2010.

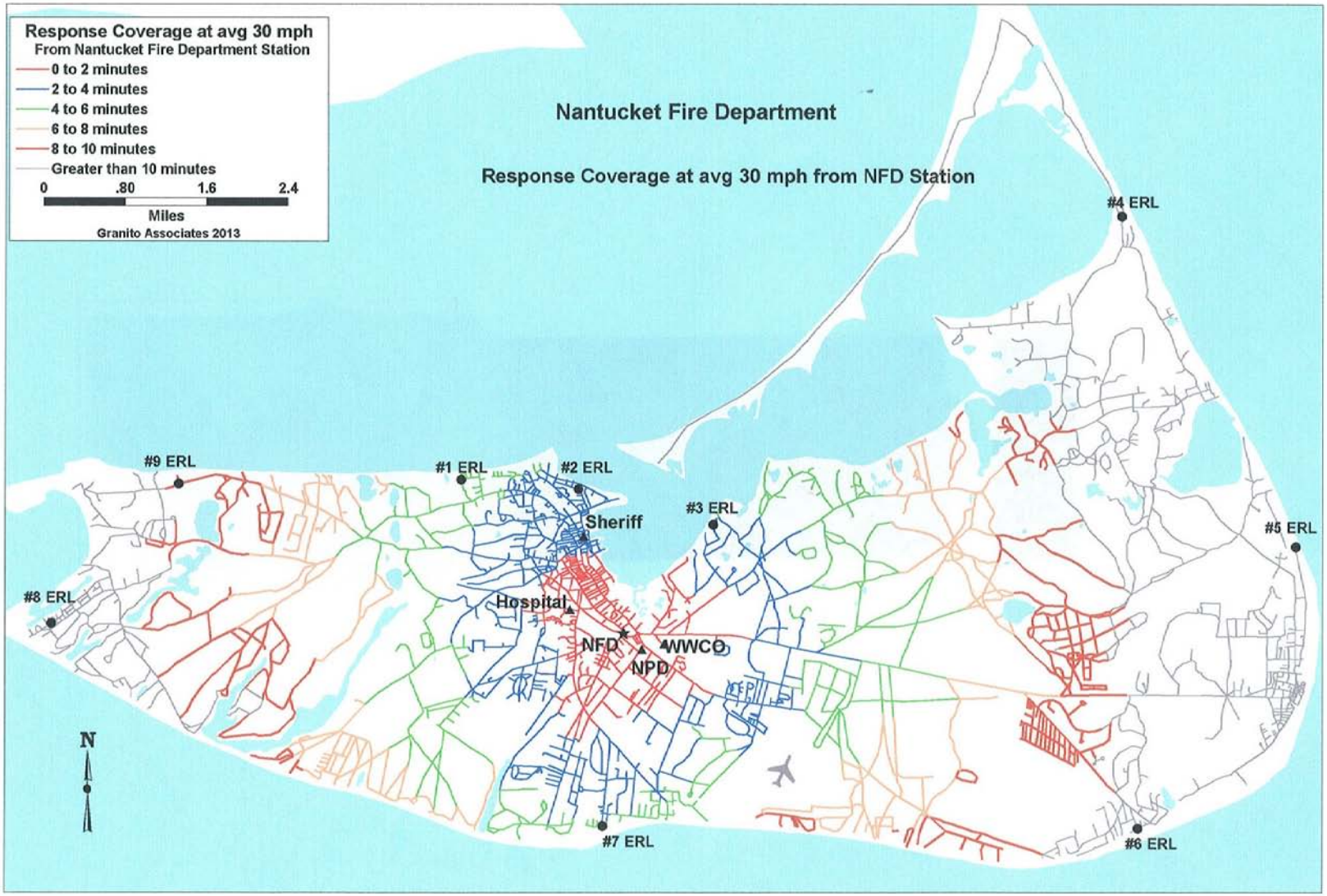
In addition to his consulting activities, Dr. Granito has been an instructor at the National Staff and Command school, and has served as an instructor and exercise controller in municipal protection/emergency management at the National Emergency Training Center. He has instructed more than 800 teams of officials in disaster preparation and emergency planning. He has taught and analyzed protection and emergency management needs abroad in such diverse environments as Winnipeg, Chernobyl, London, Caracas, Toronto, Seville, Melbourne, Berlin, and Johannesburg. He has been lead instructor for the University of Maryland's course in fire department leadership, and lectures nationally. He conducts post-incident analysis of major emergency incidents for municipalities, governmental agencies, and law firms. He serves as advisor to architectural firms, focusing on station location response issues, and to fire-rescue departments on standards of cover, national certification, and on ISO and related issues.

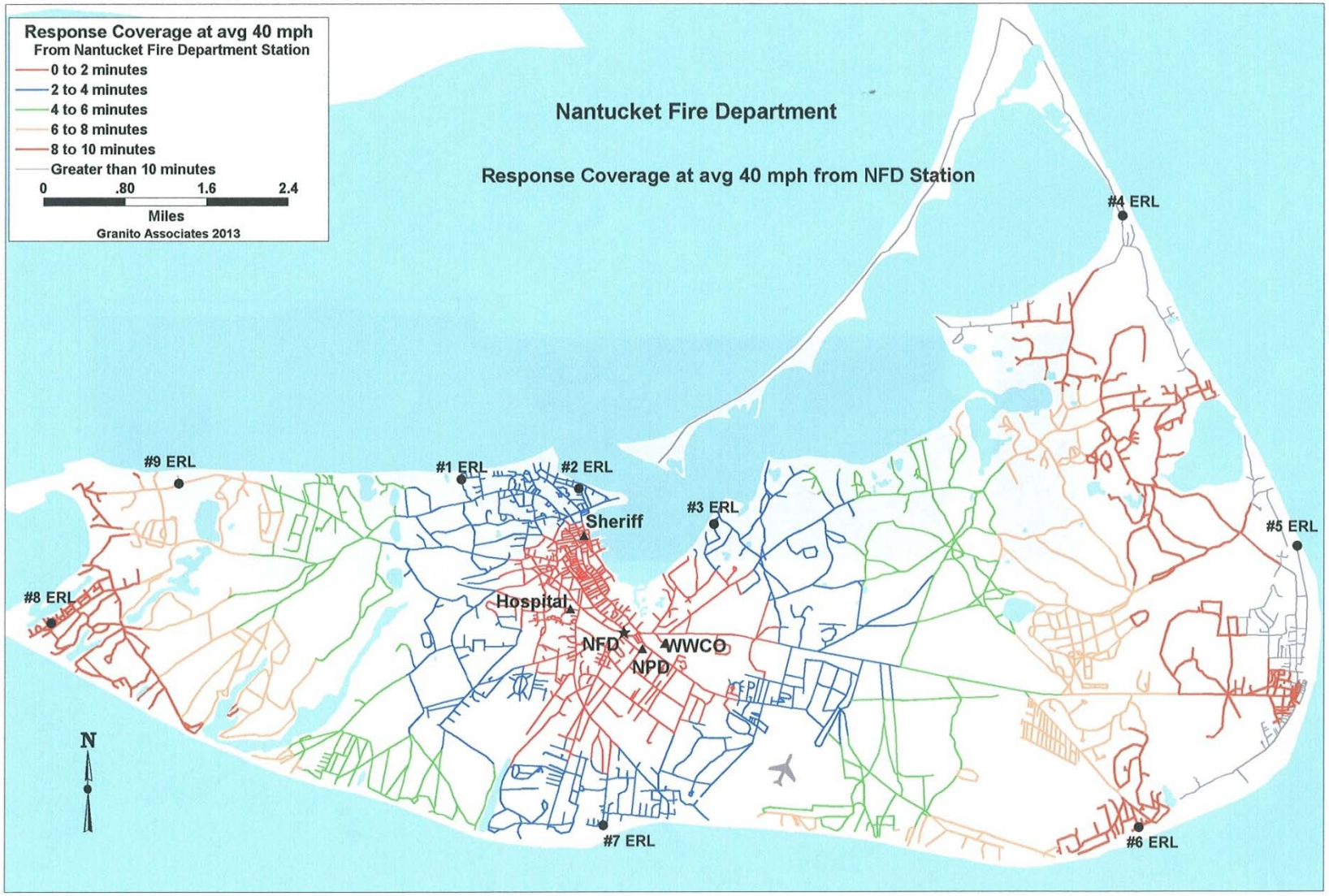
John is the author of more than 200 chapters, technical monographs, reports, journal columns and articles on the organization and management of municipal fire/rescue protection programs and emergency management organizations. He has authored the chapter on planning and evaluating community fire protection in the last four editions of the NFPA Fire Protection Handbook, and is a chapter author and Section Editor of 18 chapters for the 2008 edition. He is co- editor for the ICMA "Greenbook" Managing Fire and Rescue Services and was co-editor for the earlier edition. He is author of the section in the Fire Chiefs Handbook which addresses the future of fire protection, and Chapter 1 on the history of US Firefighting in Firefighter. In 2010/11 he authored a management book for volunteer fire officers for the Public Risk Institute. John was, for twelve years, coordinator of the NFPA Urban Fire Forum, an organization composed of chief executive officers from the fire departments of 30 of the largest cities in the United States, Canada, Great Britain, Germany, and Australia. For two recent years he conducted the research program at Oklahoma State University to reduce line of duty firefighter deaths. He has been fire protection curriculum consultant to a Taiwanese Technical University.

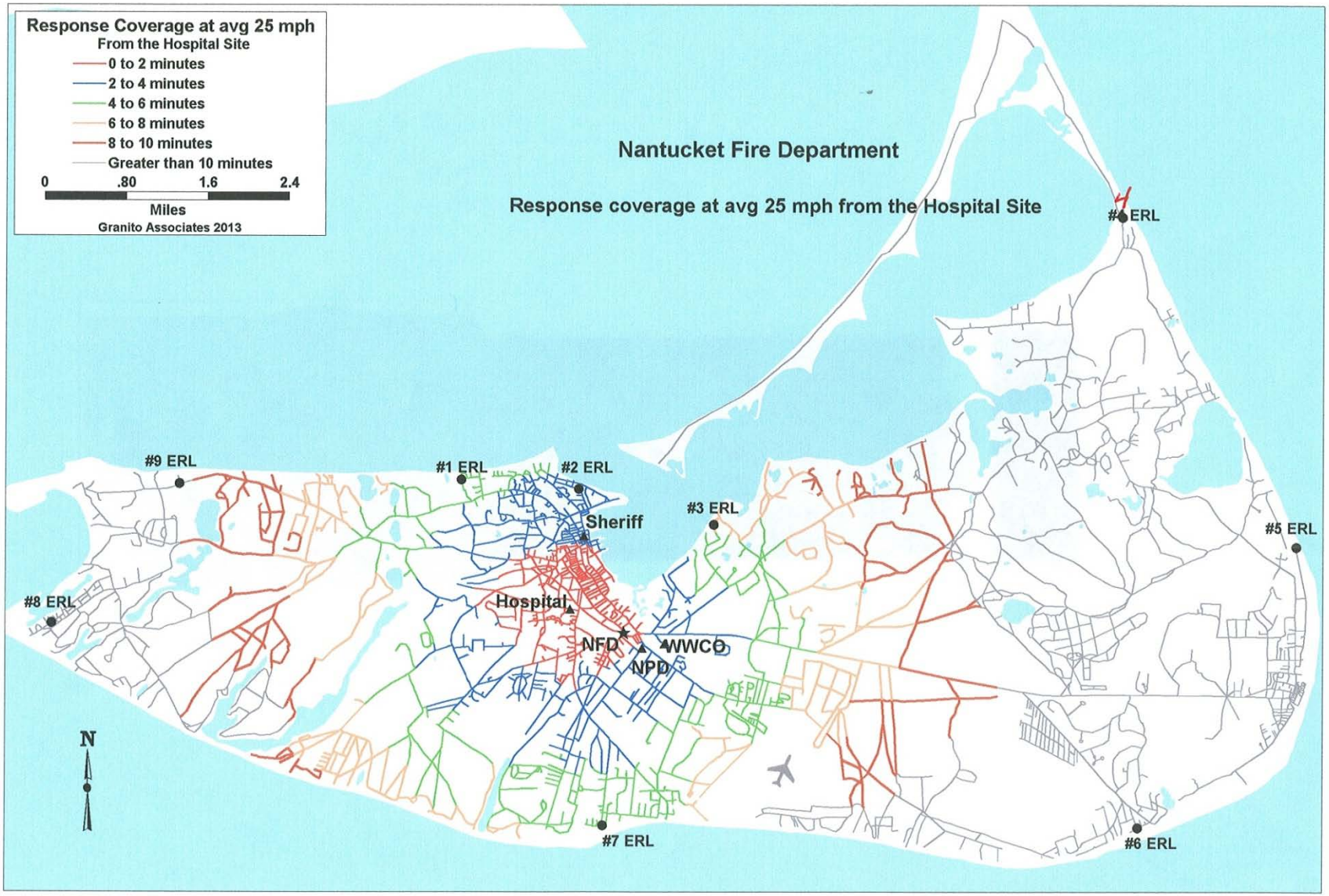
Dr. Granito was Chair of the National Fire Protection Association's 1201 technical committee on the Organization, Operation, Deployment and Evaluation of Fire and Emergency Medical Services, and has been a member of the International Disaster Research Committee. He has served as Supervisor of Fire Training for New York State, and has been a member of the International Association of Fire Chiefs, the New York State Fire Chiefs Association, and the Florida Fire Chiefs Association. He has been Associate Editor of two fire service magazines. He holds a doctoral degree in leadership studies and is Professor Emeritus and retired as Vice President for Public Service and External Affairs of the State University of New York at Binghamton (Binghamton University). In 2008 Oklahoma State University, through its fire protection program and IFSTA instituted the "Dr. John Granito Annual Award for Excellence in Fire Leadership and Management Research". *December 2012*

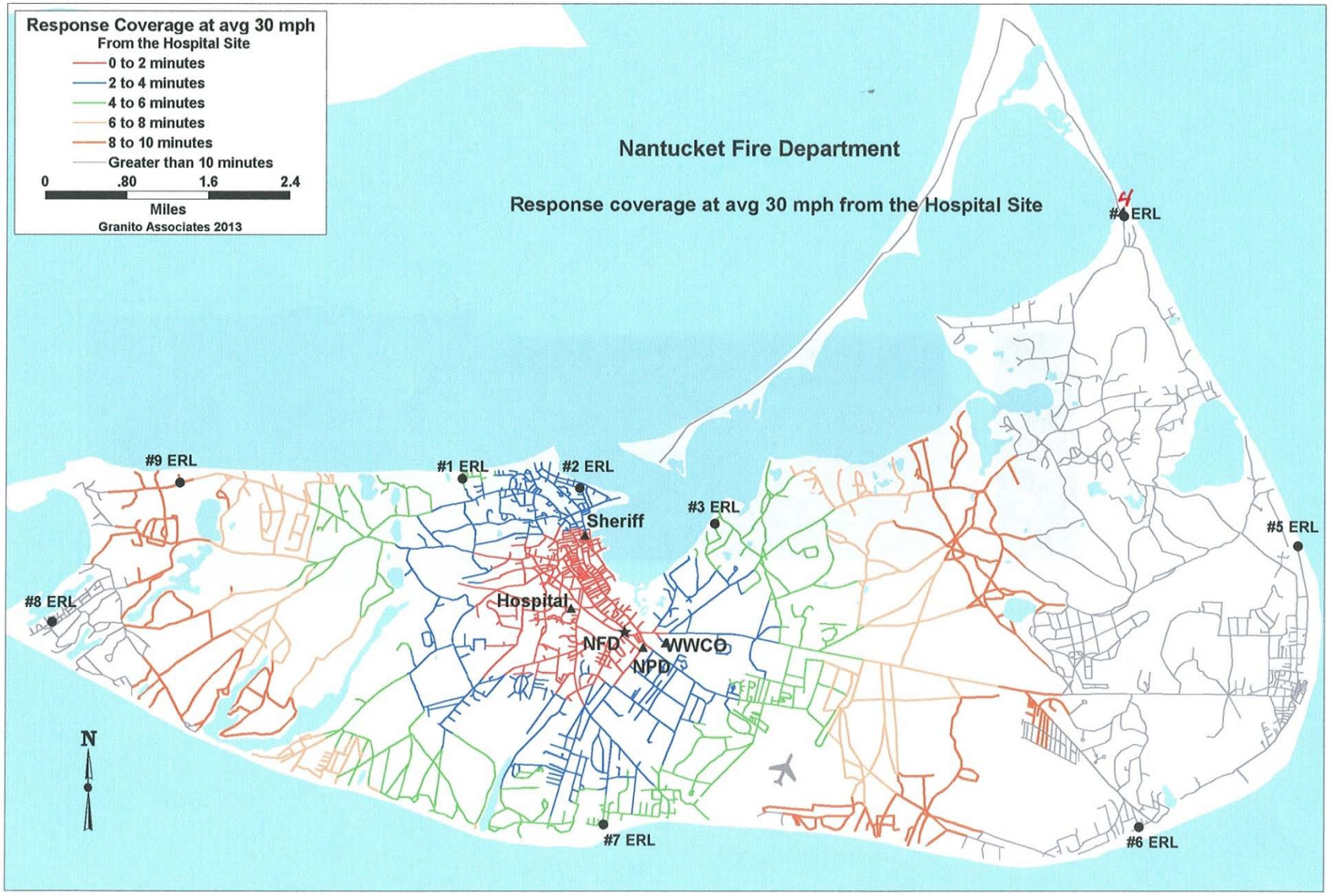

Nantucket Fire Department Base Map
Map Layers
Streets
Water Area
0
.90
1.8
2.7
Miles
Granito Associates 2013
Nantucket Fire Department Base Map
With Emergency Response Location Sites
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL

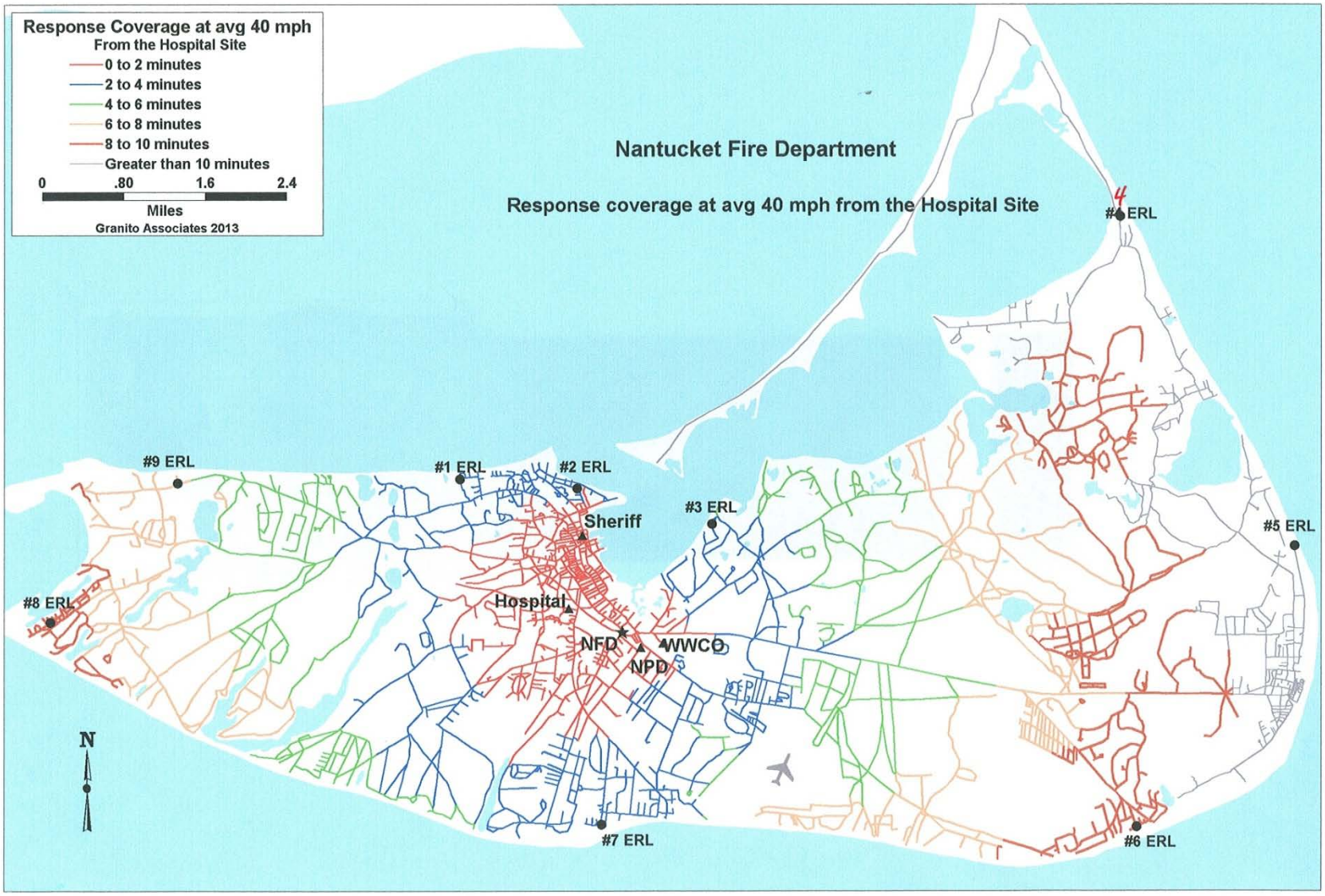

Response Coverage at avg 25 mph
From Nantucket Fire Department
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 25 mph from NFD Station
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCG
NPD
N
#7 ERL
#6 ERL

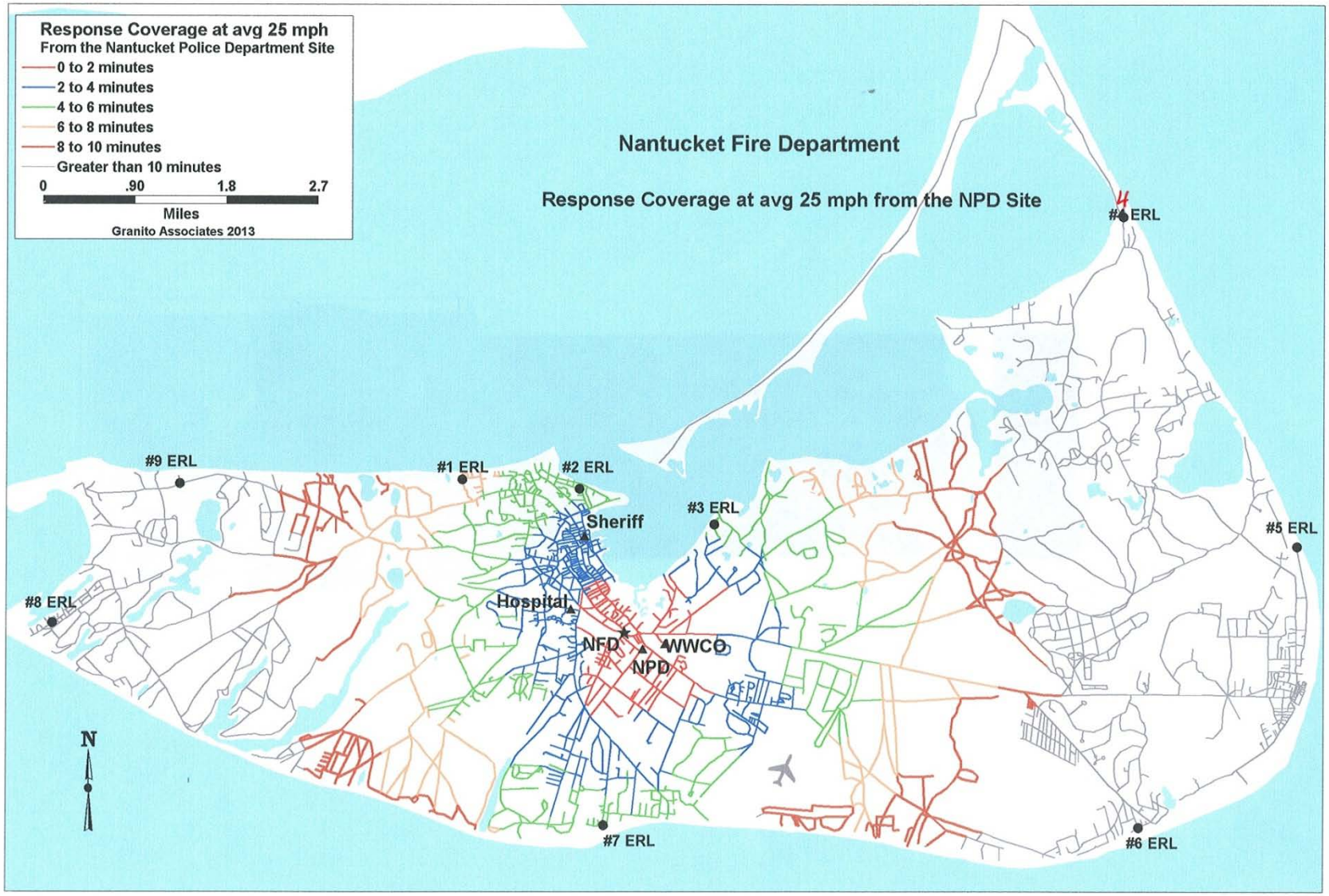

Response Coverage at avg 30 mph
From Nantucket Fire Department Station
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 30 mph from NFD Station
#4 ERL
#9 ERL
#1 ERL
#2 ERL
Sheriff
#3 ERL
#5 ERL
#8 ERL
Hospital
NFD
WWCD
NPD
N
#7 ERL
#6 ERL

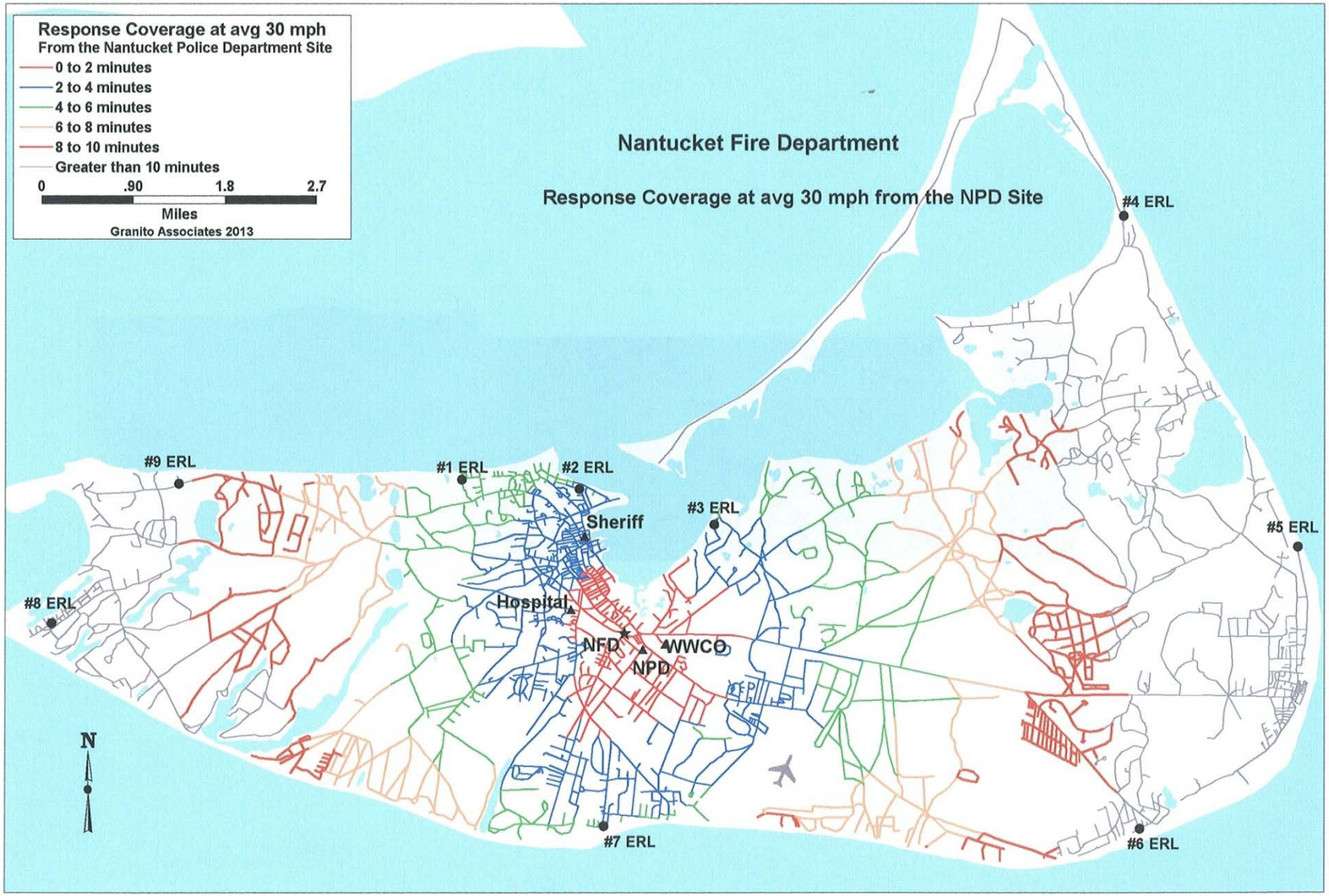

Response Coverage at avg 40 mph
From Nantucket Fire Department Station
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 40 mph from NFD Station
#4 ERL
#9 ERL
#1 ERL
#2 ERL
Sheriff
#3 ERL
#5 ERL
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL

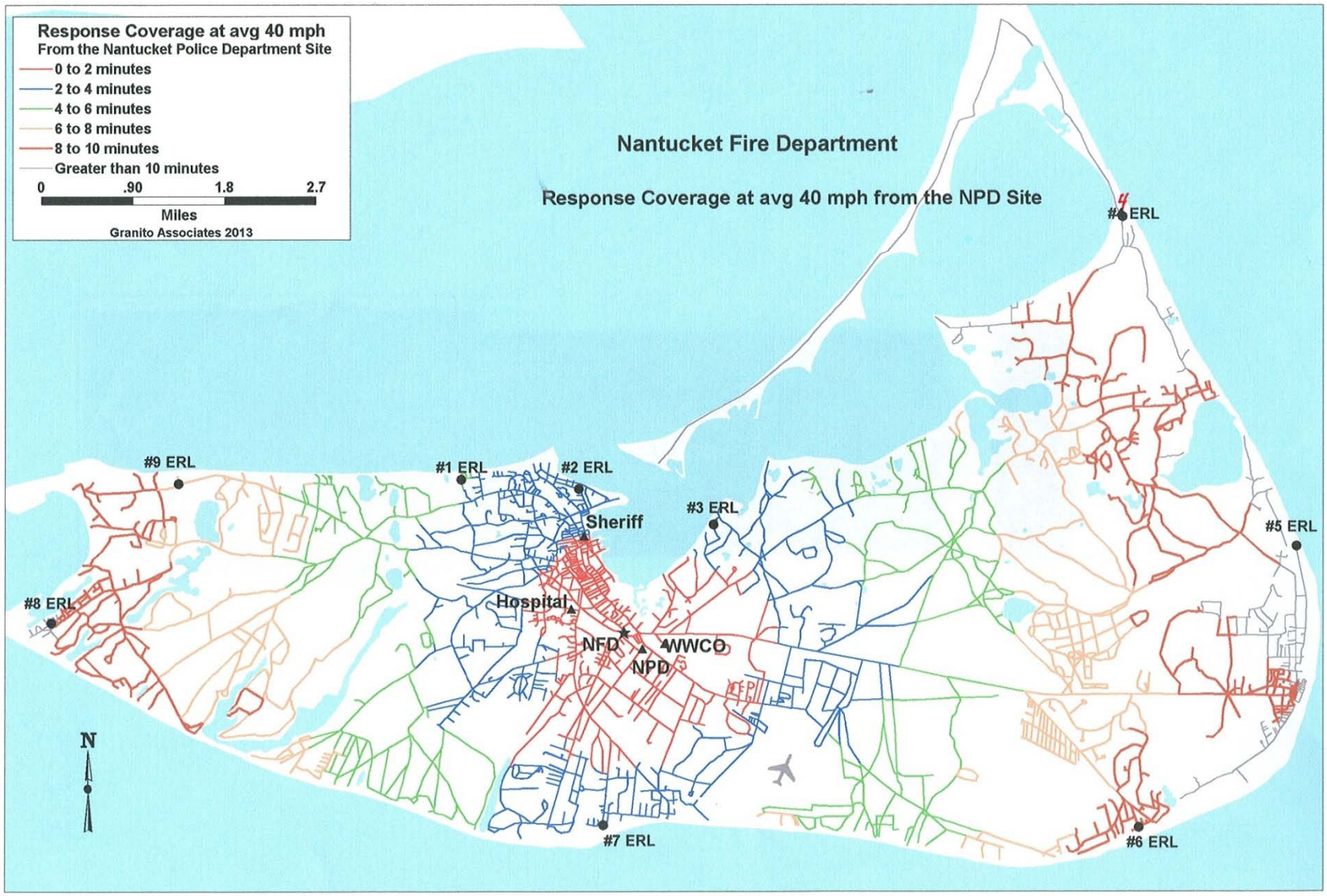

Response Coverage at avg 25 mph
From the Hospital Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response coverage at avg 25 mph from the Hospital Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
Sheriff
#3 ERL
#5 ERL
#8 ERL
Hospital
NFD
WWCD
NPD
N
#7 ERL
#6 ERL

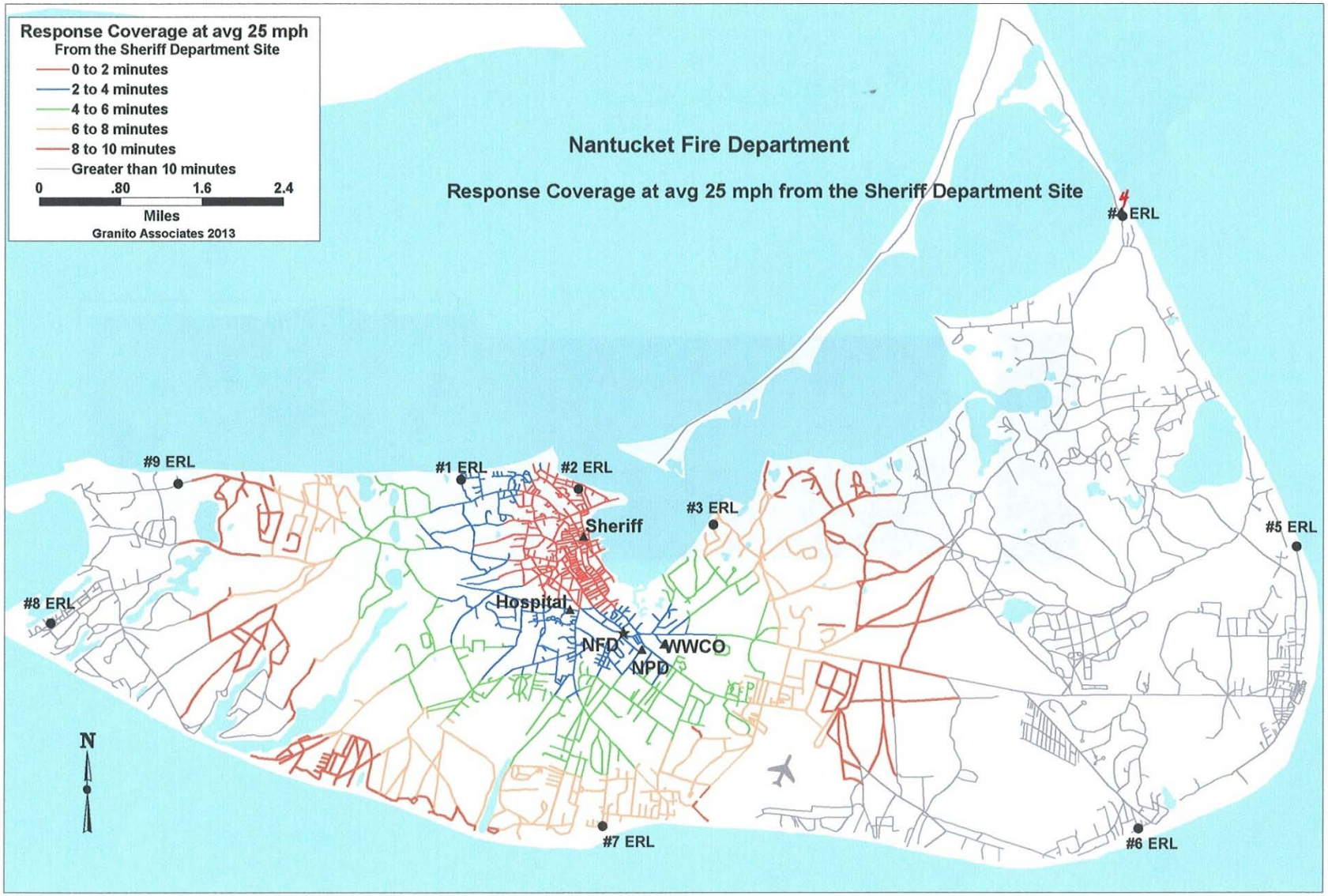

Response Coverage at avg 30 mph
From the Hospital Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response coverage at avg 30 mph from the Hospital Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
Hospital
NFD
WWCO
NPD
#8 ERL
#7 ERL
#6 ERL
N

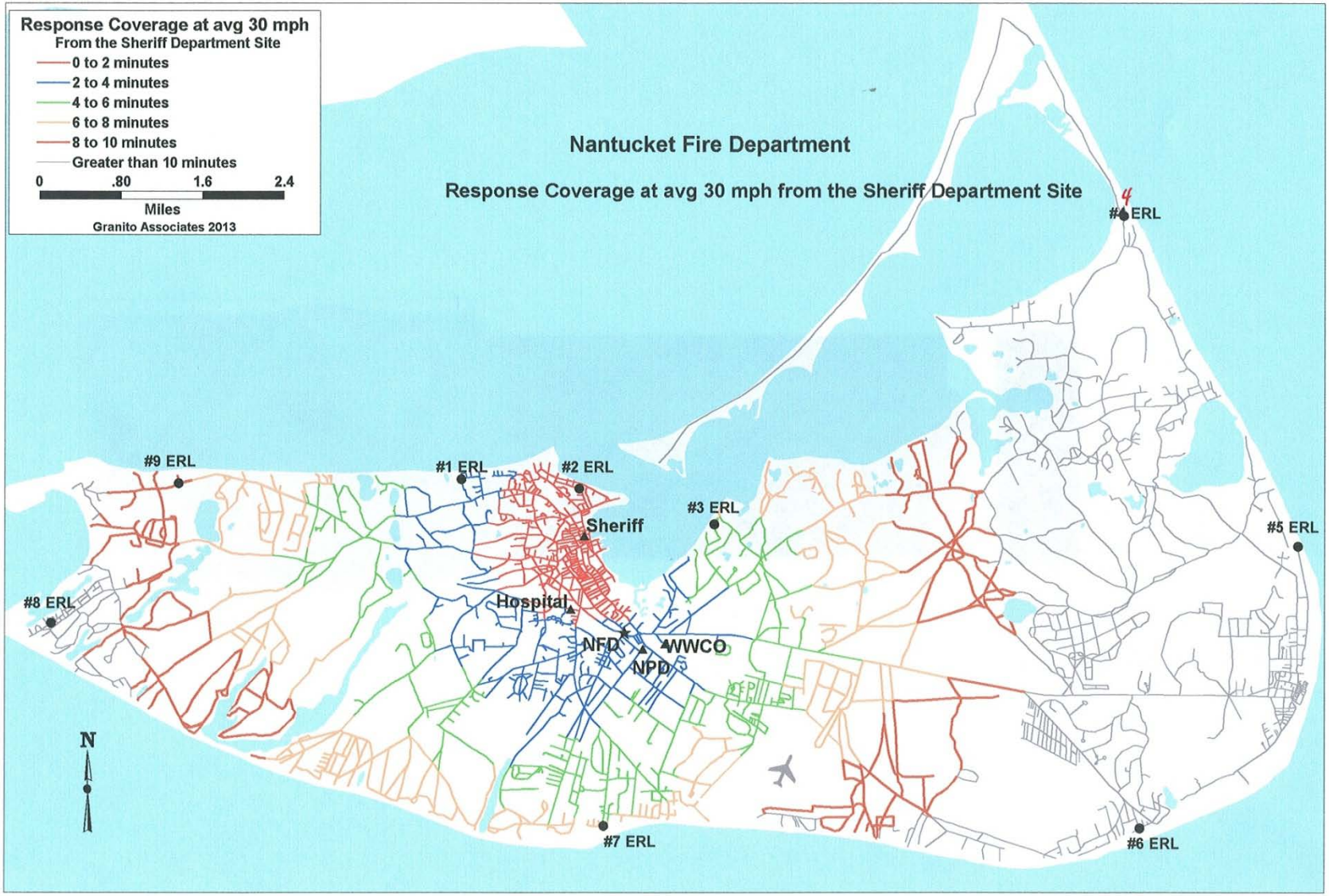

Response Coverage at avg 40 mph
From the Hospital Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response coverage at avg 40 mph from the Hospital Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
Hospital
#8 ERL
NFD
WWCO
NPD
N
#7 ERL
#6 ERL

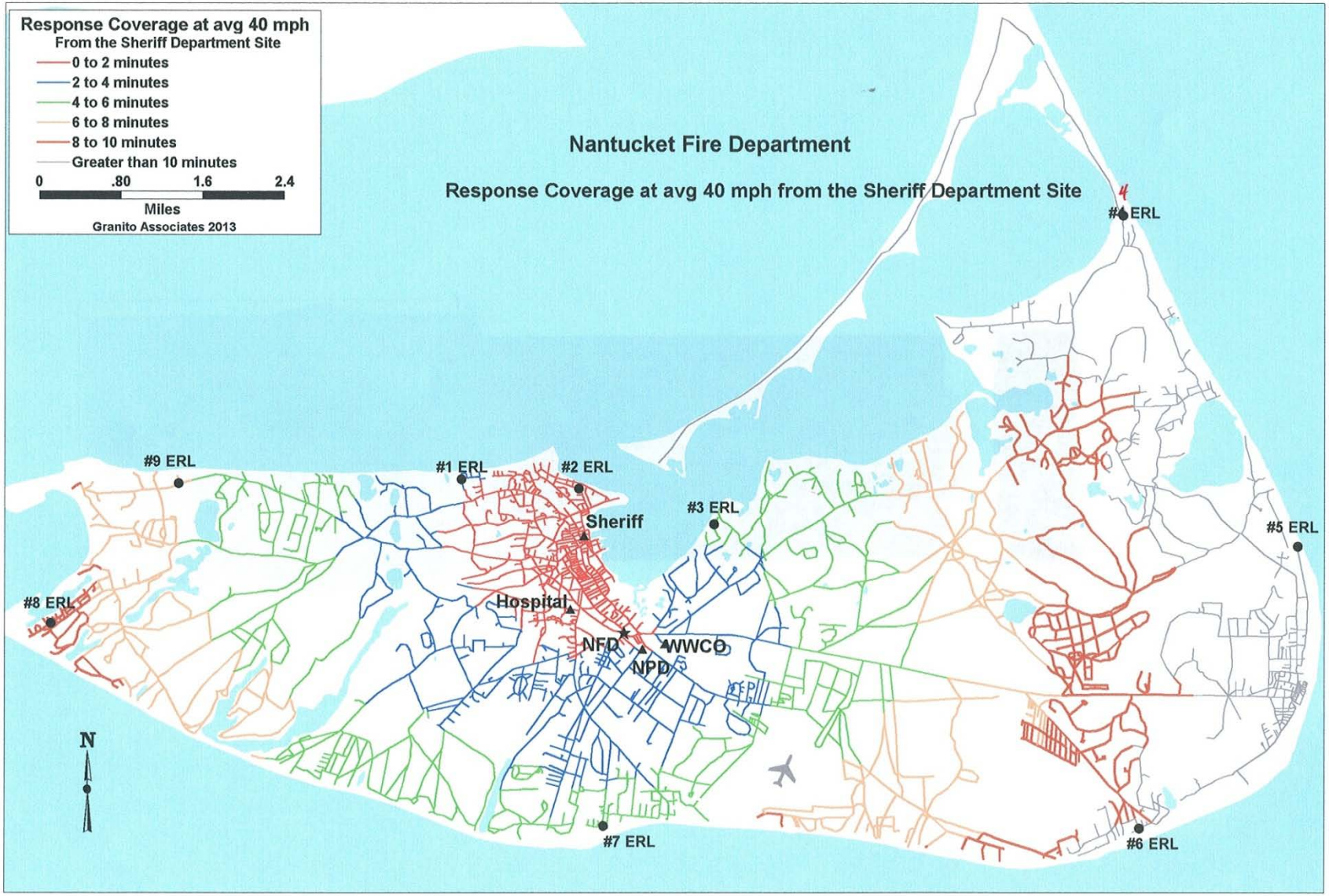

Response Coverage at avg 25 mph
From the Nantucket Police Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.90
1.8
2.7
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 25 mph from the NPD Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCG
NPD
N
#7 ERL
#6 ERL

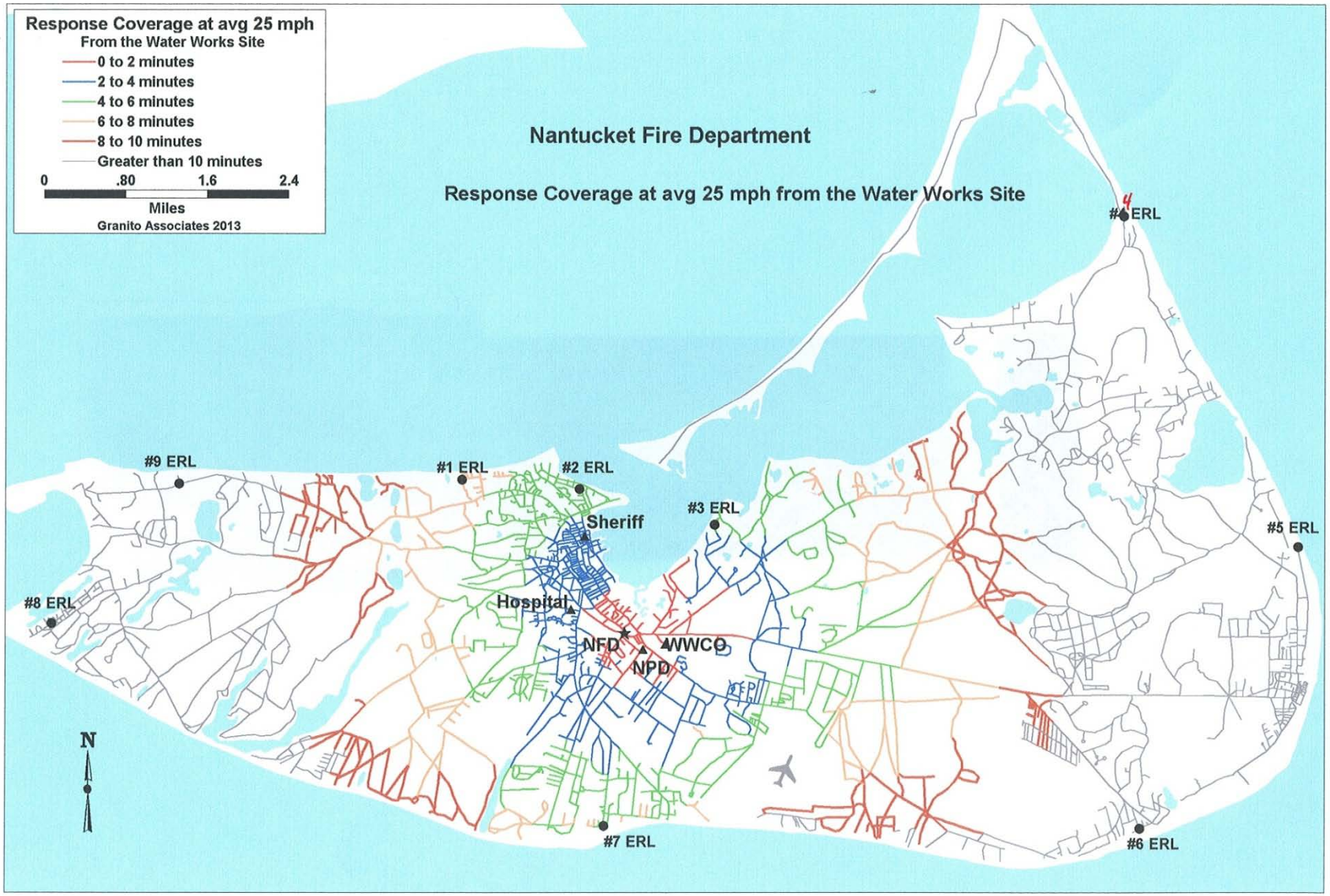

Response Coverage at avg 30 mph
From the Nantucket Police Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.90
1.8
2.7
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 30 mph from the NPD Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL

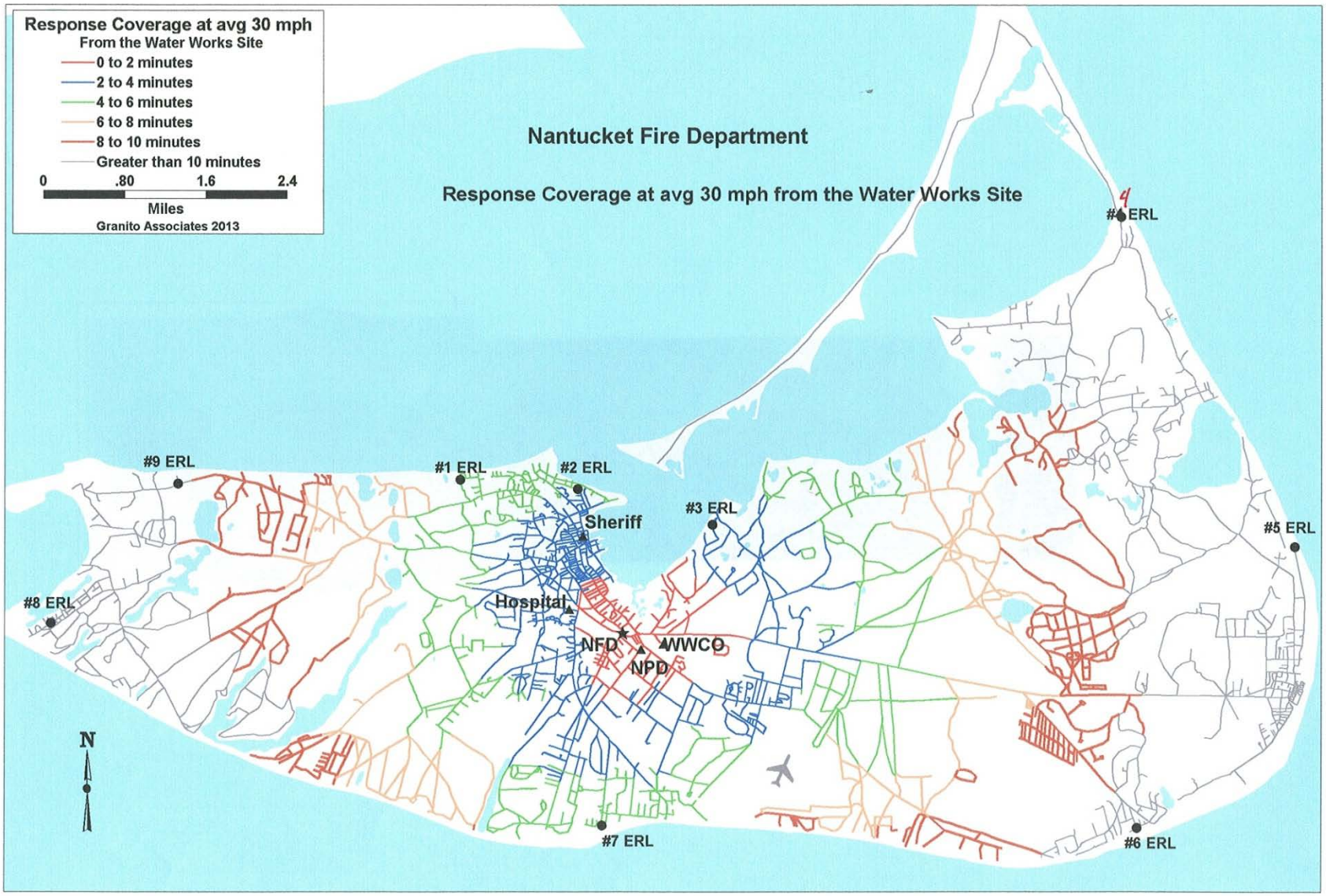

Response Coverage at avg 40 mph
From the Nantucket Police Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.90
1.8
2.7
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 40 mph from the NPD Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
Sheriff
#3 ERL
#5 ERL
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL

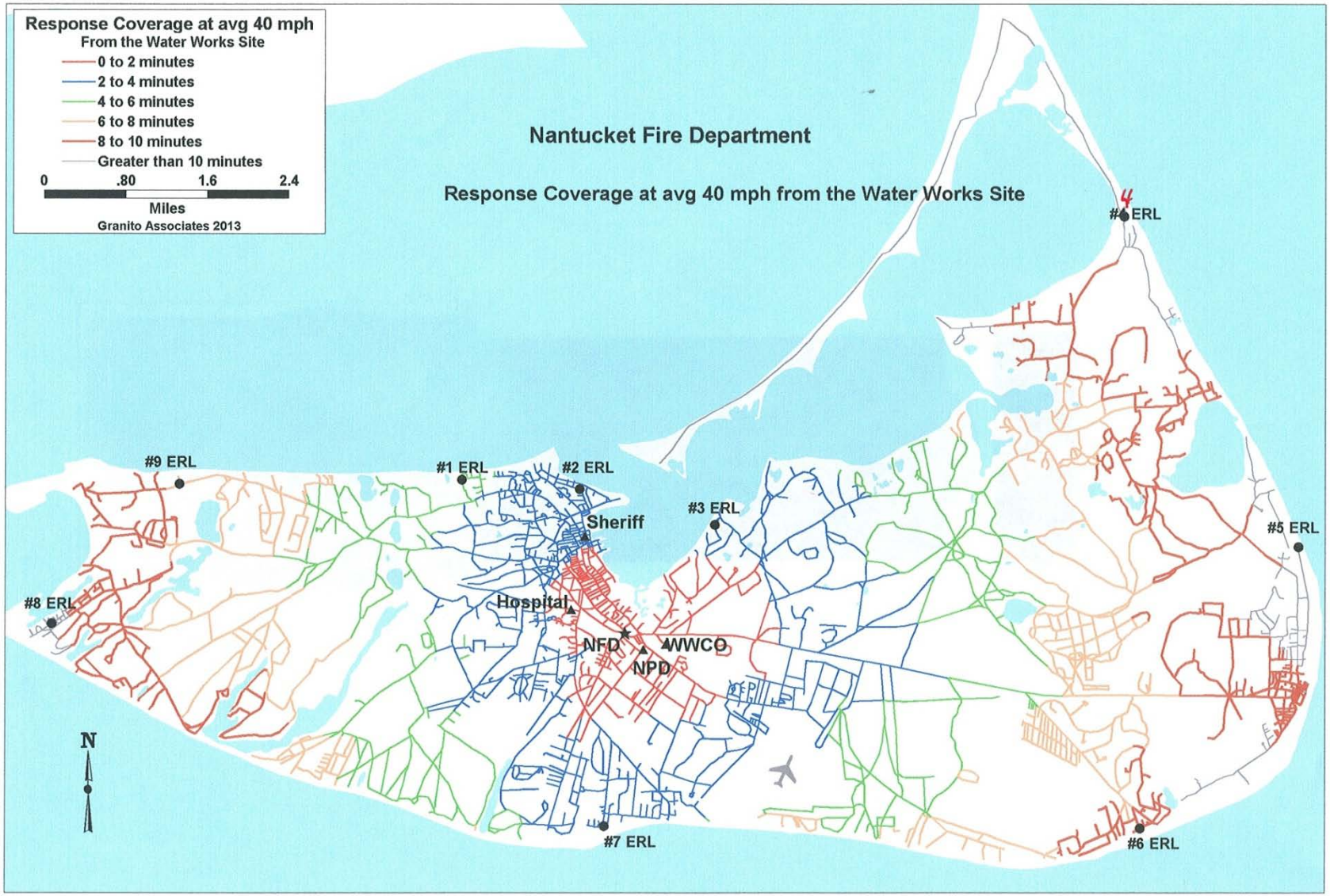

Response Coverage at avg 25 mph
From the Sheriff Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 25 mph from the Sheriff Department Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL


Response Coverage at avg 30 mph
From the Sheriff Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 30 mph from the Sheriff Department Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
Hospital
#8 ERL
NFD
WWCO
NPD
N
#7 ERL
#6 ERL


Response Coverage at avg 40 mph
From the Sheriff Department Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 40 mph from the Sheriff Department Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
Hospital
#8 ERL
NFD
WWCO
NPD
N
#7 ERL
#6 ERL


Response Coverage at avg 25 mph
From the Water Works Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0
.80
1.6
2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 25 mph from the Water Works Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
Sheriff
#3 ERL
#5 ERL
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL


Response Coverage at avg 30 mph
From the Water Works Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 30 mph from the Water Works Site
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#4 ERL
#5 ERL
#6 ERL
#7 ERL
#8 ERL
Sheriff
Hospital
NFD
NPD
WWCO
N


Response Coverage at avg 40 mph
From the Water Works Site
0 to 2 minutes
2 to 4 minutes
4 to 6 minutes
6 to 8 minutes
8 to 10 minutes
Greater than 10 minutes
0 .80 1.6 2.4
Miles
Granito Associates 2013
Nantucket Fire Department
Response Coverage at avg 40 mph from the Water Works Site
#4 ERL
#9 ERL
#1 ERL
#2 ERL
#3 ERL
#5 ERL
Sheriff
#8 ERL
Hospital
NFD
WWCO
NPD
N
#7 ERL
#6 ERL