

Act 250 and Water Quality in the State of Vermont

By Michael Storace and Emma Shea

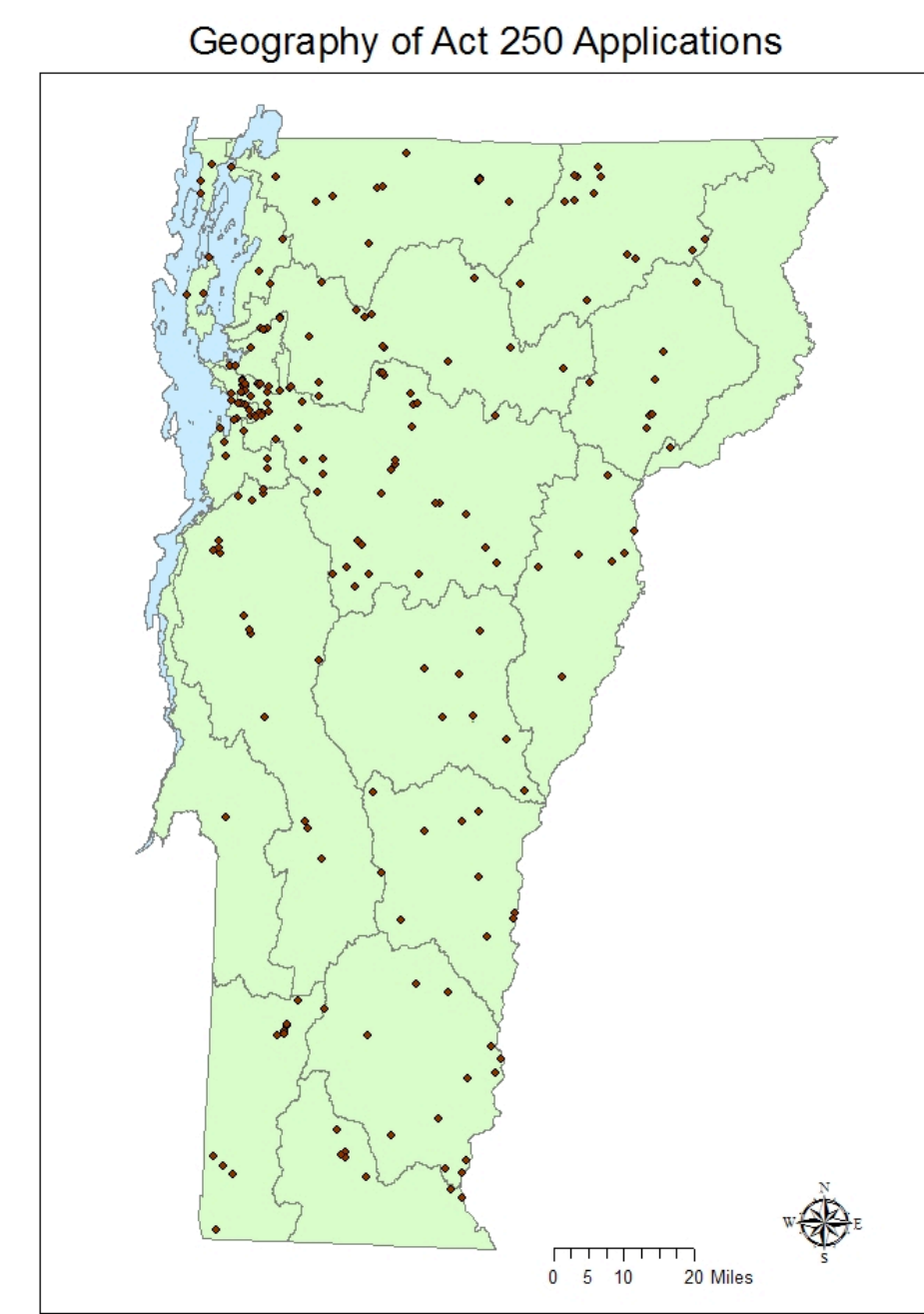
Do Act 250 development projects with factors that may impact Vermont's water quality get approved?



Introduction

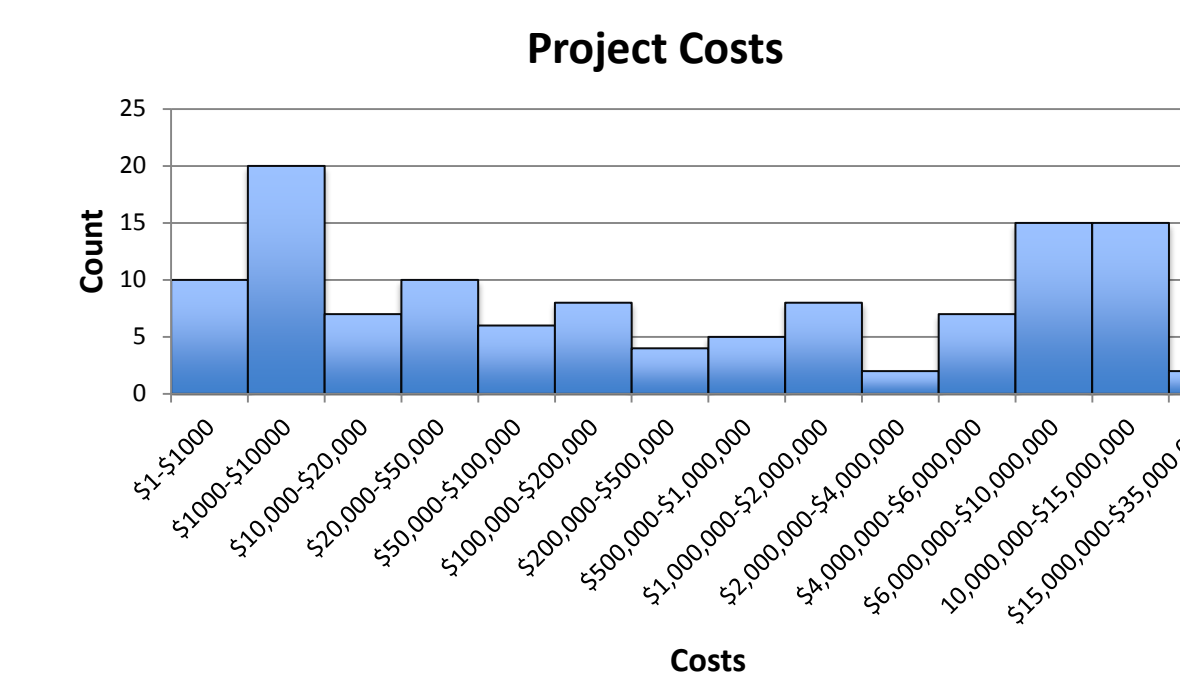
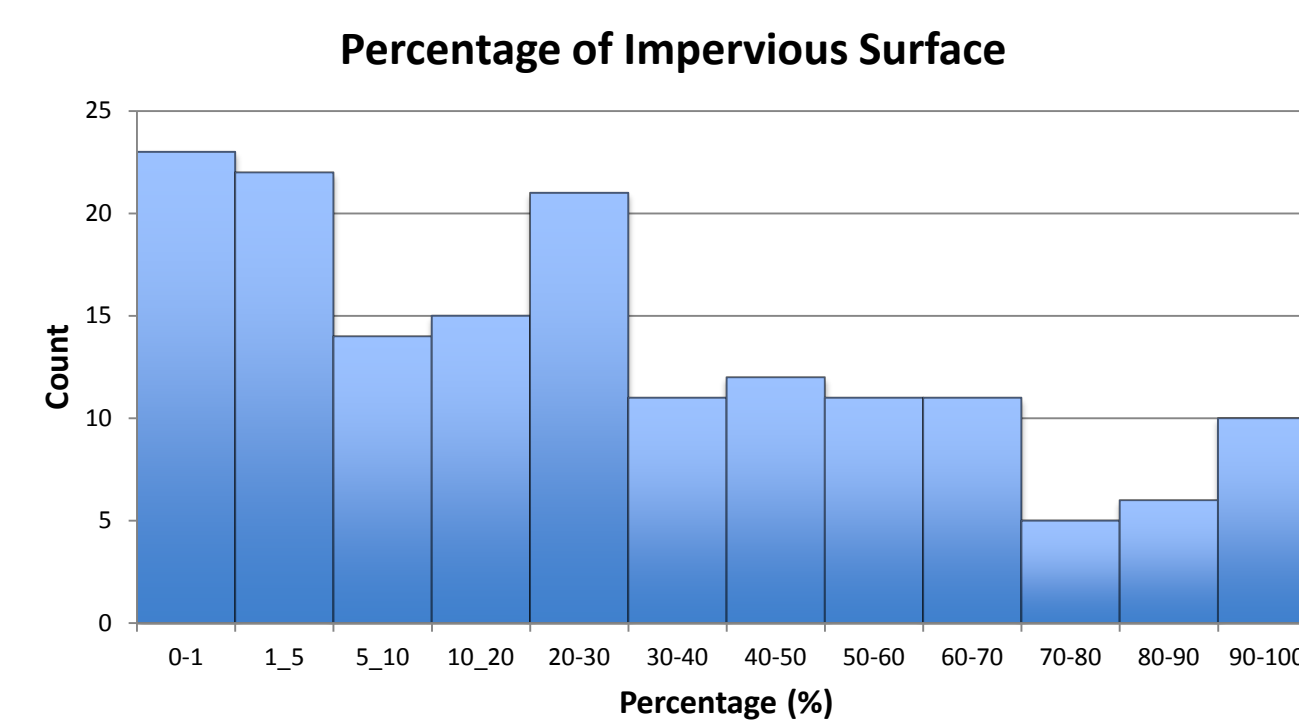
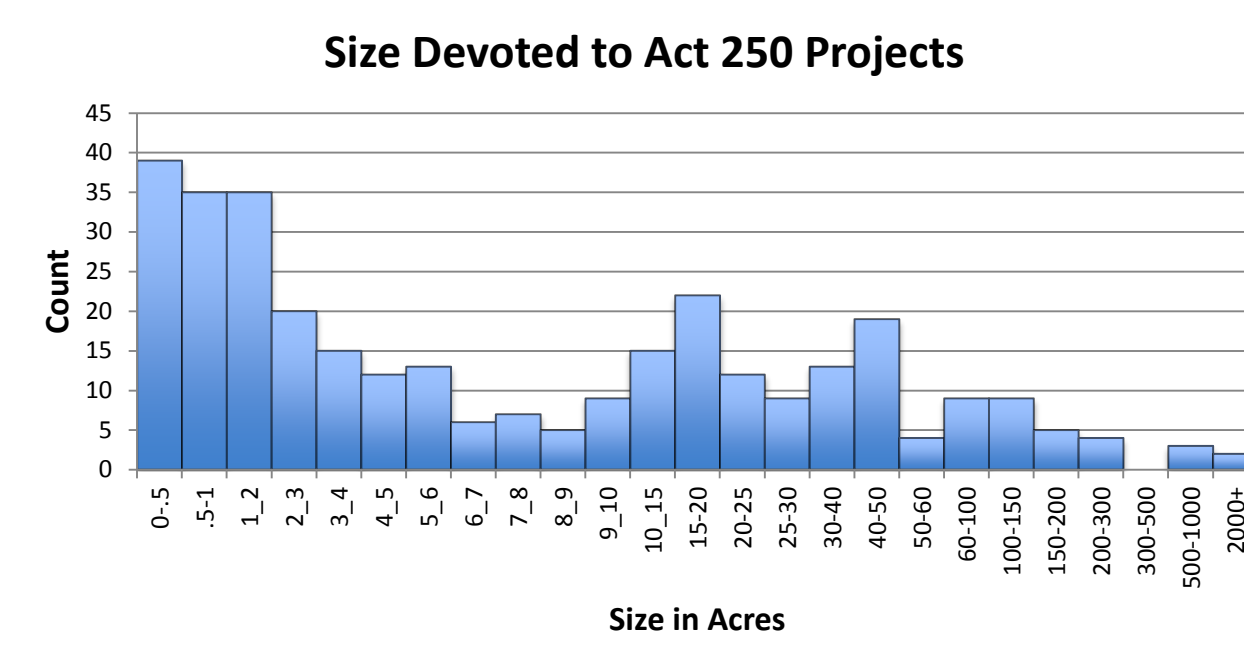
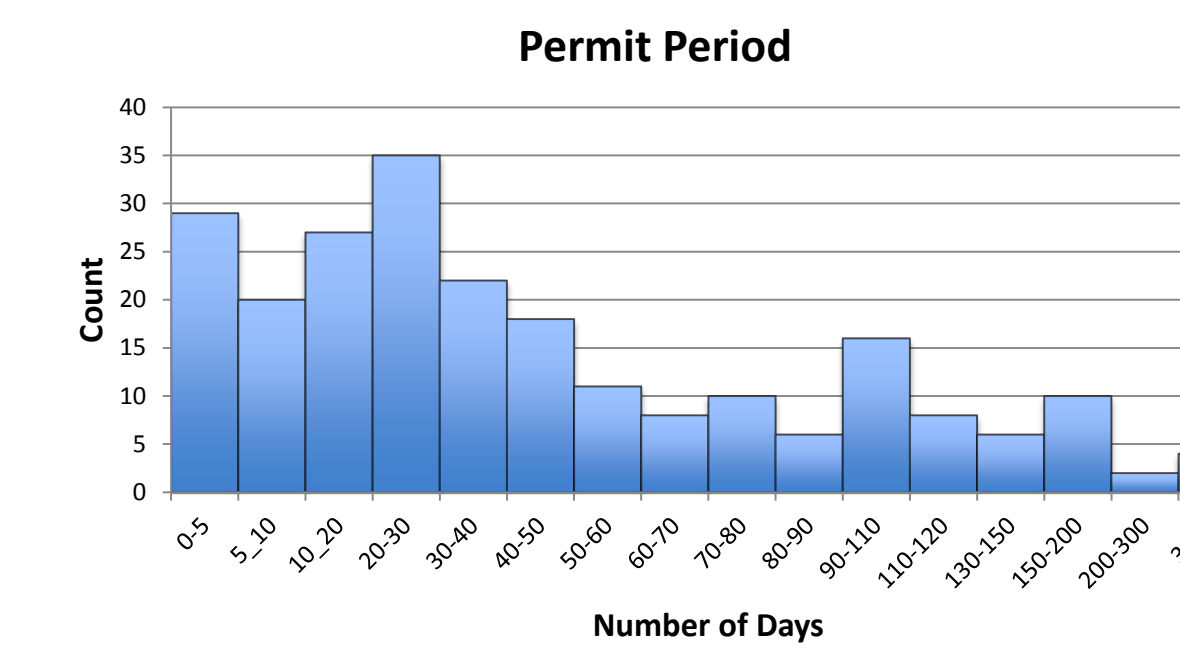
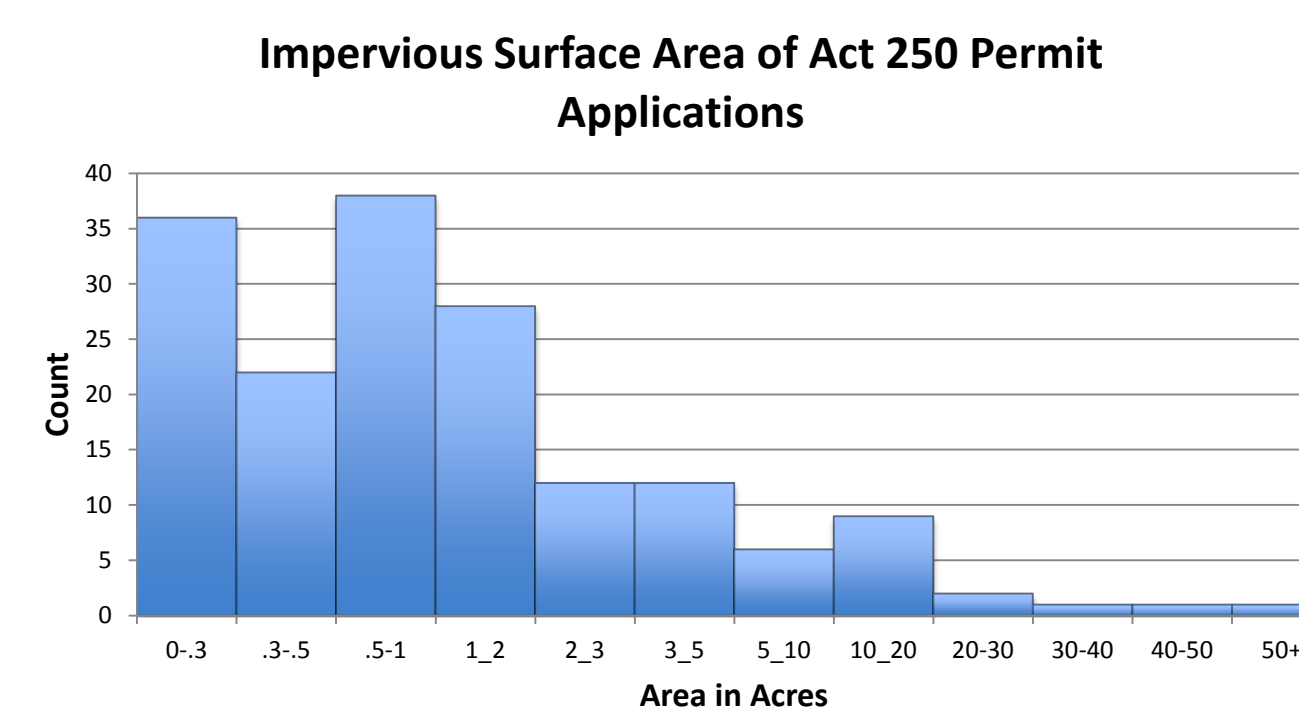
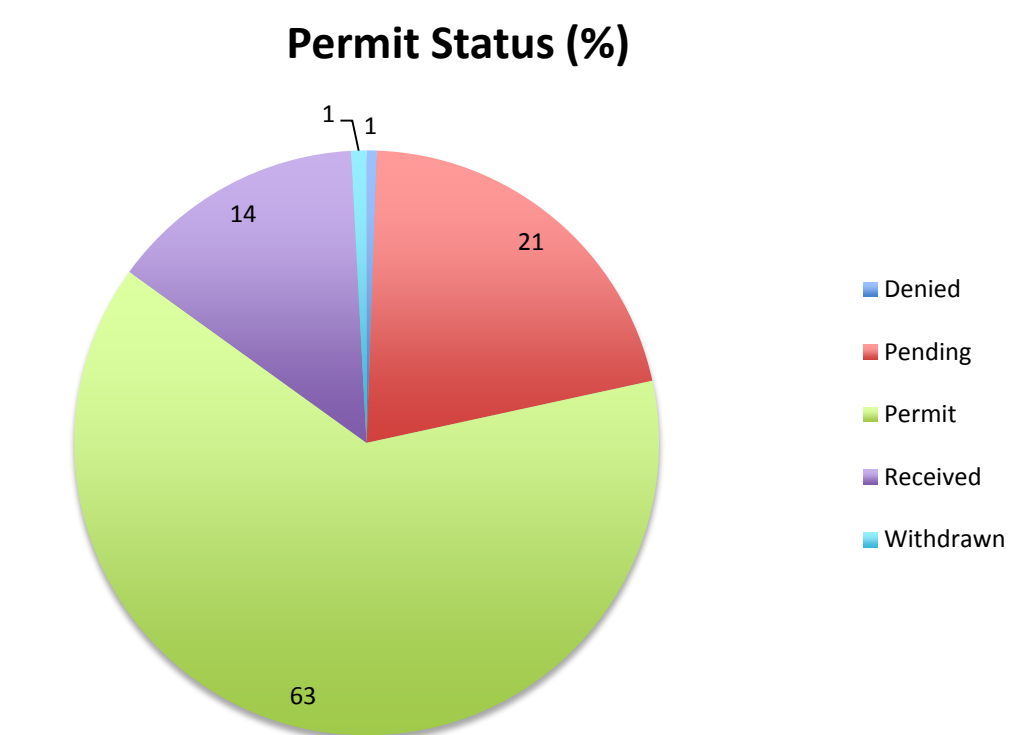
Water quality is an issue of importance for the state of Vermont, and especially Lake Champlain who has faced increasing scrutiny for its poor water quality by state and federal environmental agencies. The state of Vermont contains specific legislation, called Act 250, for most development projects in the state. According to Act 250, development projects must acknowledge the effect they will have on 10 specific criteria, including air quality, water quality, soils, road conditions, and educational facilities, among others. We specifically sought the relationship between Act 250 applications, Act 250 permitted projects, and state water quality.

Results



County	Total	Percentage (%)
Chittenden	90	25.57
Windsor	36	10.23
Washington	32	9.09
Lamoille	28	7.95
Orleans	26	7.39
Windham	26	7.39
Rutland	23	6.53
Franklin	20	5.68
Bennington	20	5.68
Addison	14	3.98
Caledonia	13	3.69
Orange	12	3.41
Grand Isle	7	1.99
Essex	5	1.42
Grand Total	352	100

Development Classification	Total	Percentage (%)
Commercial	124	35.23
Expansion of Existing Development	44	12.5
Residential	43	12.22
Subdivision	41	11.65
Extension of Construction Completion Date	20	5.68
Municipal Government	18	5.11
Wastewater	13	3.69
Communication Broadcast System	11	3.13
Recreation	9	2.56
Educational	8	2.27
Medical	8	2.27
State Government	8	2.27
Non-Commercial construction	3	0.85
Over 2,500 feet in elevation	2	0.57
Grand Total	352	100

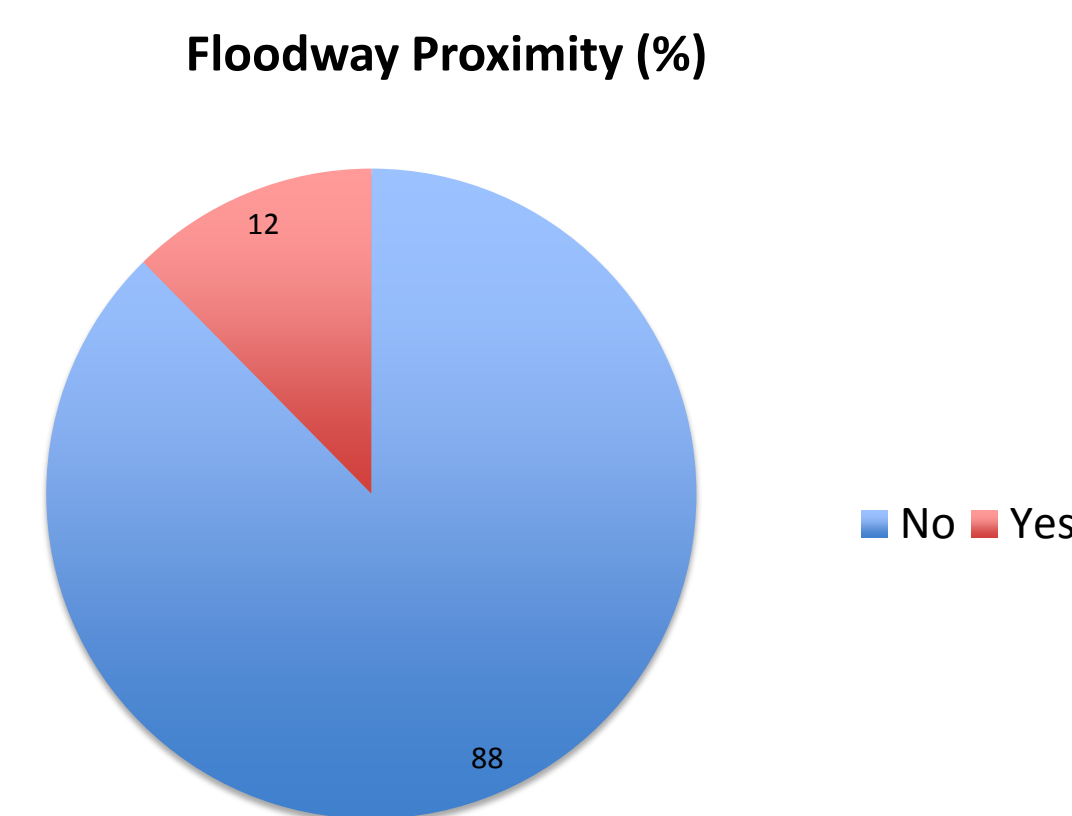


Methods

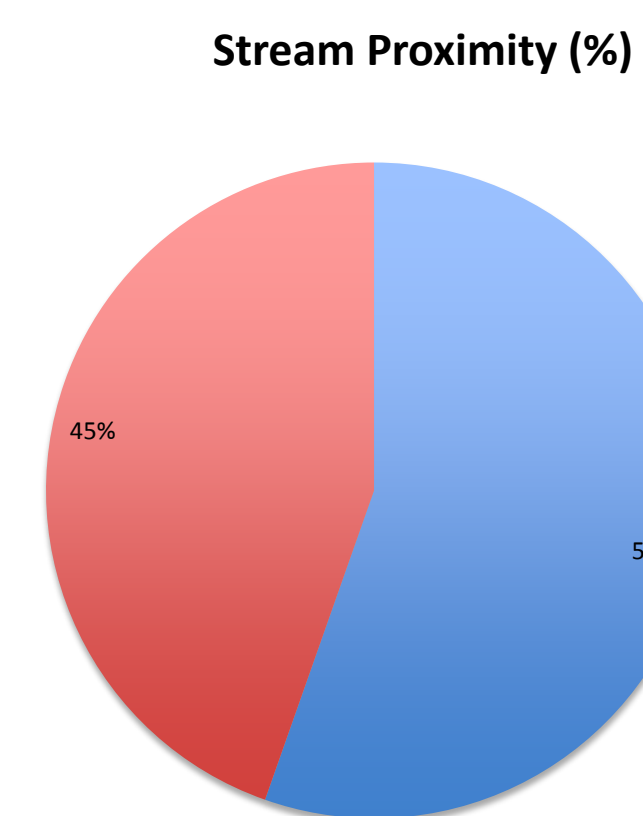
Vermont's Agency of Natural Resources (ANR) collects application materials in an online database, and we collected data from applications submitted from 2013 and 2014. We collected the following variables:

- Project type
- Status of application
- Days to permit decision
- Application type
- Town and County
- Development classification
- Out-of-state vs. in-state
- Construction duration
- Size of project
- Cost of project
- Latitude and Longitude
- Impervious surface area of projects
- Proximity of project to headwaters
- Proximity of project to floodways
- Proximity of project to streams
- Proximity of project to shoreline
- Proximity of project to wetlands

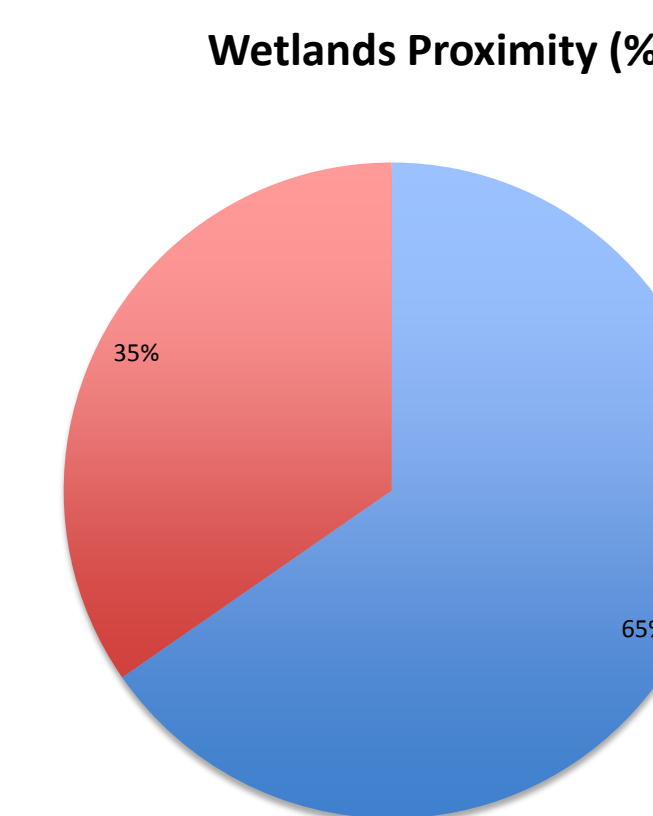
We analyzed these variables using Microsoft Excel to determine the number of development projects that were in close proximity to these hydrologic features. We organized these water quality variables by Vermont county. We wanted to determine the types of projects being applied for, the location of these projects within Vermont, and how these projects could affect water quality in the state.



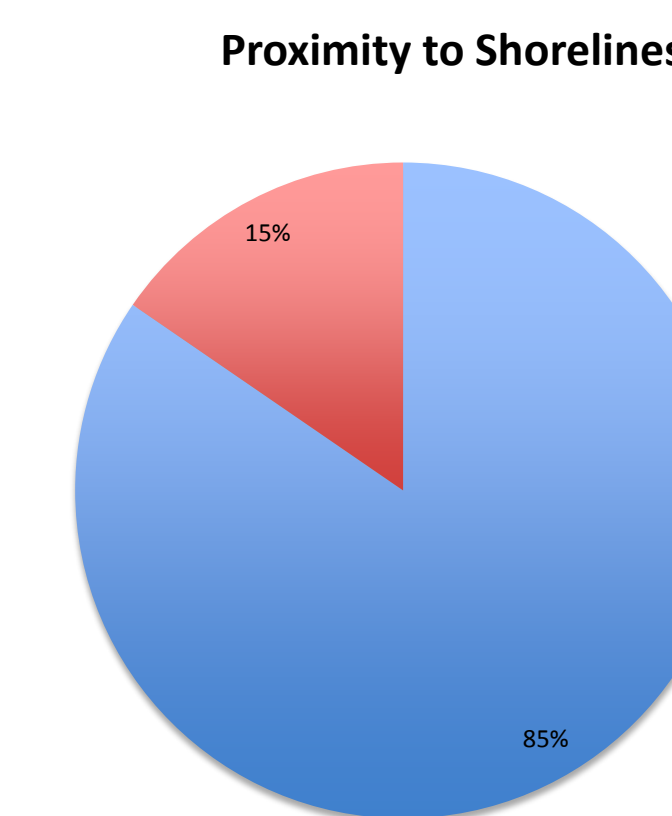
County	Proximity to Floodway		Grand Total
	Yes	No	
Addison	5	2	7
Bennington	7	1	8
Caledonia	7	7	14
Chittenden	57	2	59
Essex	2	2	4
Franklin	12	1	13
Grand Isle	3	3	6
Lamoille	11	3	14
Orange	7	7	14
Orleans	16	1	17
Rutland	10	10	20
Washington	9	4	13
Windham	13	2	15
Windsor	18	7	25
Grand Total	177	25	202



County	Stream Proximity		Grand Total
	No	Yes	
Addison	1	6	7
Bennington	4	4	8
Caledonia	5	2	7
Chittenden	40	19	59
Essex	2	2	4
Franklin	6	8	14
Grand Isle	3	3	6
Lamoille	8	6	14
Orange	7	7	14
Orleans	8	9	17
Rutland	7	3	10
Washington	5	8	13
Windham	8	7	15
Windsor	9	17	26
Grand Total	113	91	204



County	Wetlands Proximity		Grand Total
	No	Yes	
Addison	3	4	7
Bennington	7	1	8
Caledonia	6	1	7
Chittenden	36	23	59
Essex	1	2	3
Franklin	7	7	14
Grand Isle	3	3	6
Lamoille	9	5	14
Orange	5	1	6
Orleans	11	6	17
Rutland	7	3	10
Washington	7	6	13
Windham	11	4	15
Windsor	19	7	26
Grand Total	132	70	202



County	Proximity to Shoreline		Grand Total
	Yes	No	
Addison	4	3	7
Bennington	8	1	9
Caledonia	6	1	7
Chittenden	52	6	58
Essex	3	1	4
Franklin	13	1	14
Grand Isle	3	3	6
Lamoille	10	3	13
Orange	5	1	6
Orleans	15	2	17
Rutland	8	2	10
Washington	11	2	13
Windham	12	3	15
Windsor	20	6	26
Grand Total	170	31	201

Conclusions

- The majority of projects were approved.
 - Only 2 were denied.
- The majority of projects were approved under 30 days.
 - 30% were approved within 50 days.
- There were high percentages of projects in close proximity to streams and wetlands.
- Most projects had a low area and percentage of impervious surface.
- Most development projects were in Chittenden County.
- There were frequent data gaps and broken links in the database.
- There is not an extensive historical record of permits on the database.
- The most frequent development classification was for commercial projects.
- Although almost all applications are approved, many are approved with revisions in which the applicant rectifies environmentally detrimental factors of a project.

References

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