

# Lessons Learned from “Big Night Detours” in Keene



**Brett Amy Thelen**

Science Director

Harris Center for Conservation Education

[thelen@harriscenter.org](mailto:thelen@harriscenter.org)



# the *spring* amphibian migration



photo: Tyler Hogan



**spotted salamander**  
(*Ambystoma maculatum*)



**wood frog**  
(*Lithobates sylvatica*)



**Jefferson/blue-spotted complex\***  
(*Ambystoma jeffersonianum-laterale*)

**\*Species of Greatest Conservation Need**



**spring peeper**  
(*Pseudacris crucifer*)



**gray tree frog**  
(*Hyla versicolor*)



photo: Dave Huth

**American toad**  
(*Anaxyrus americanus*)

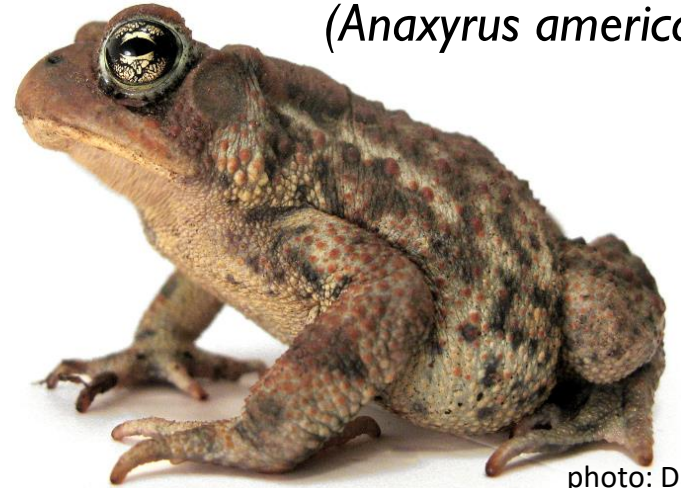


photo: Dave Huth

**green frog**  
(*Lithobates clamitans*)



photo: John White

**pickerel frog**  
(*Lithobates palustris*)



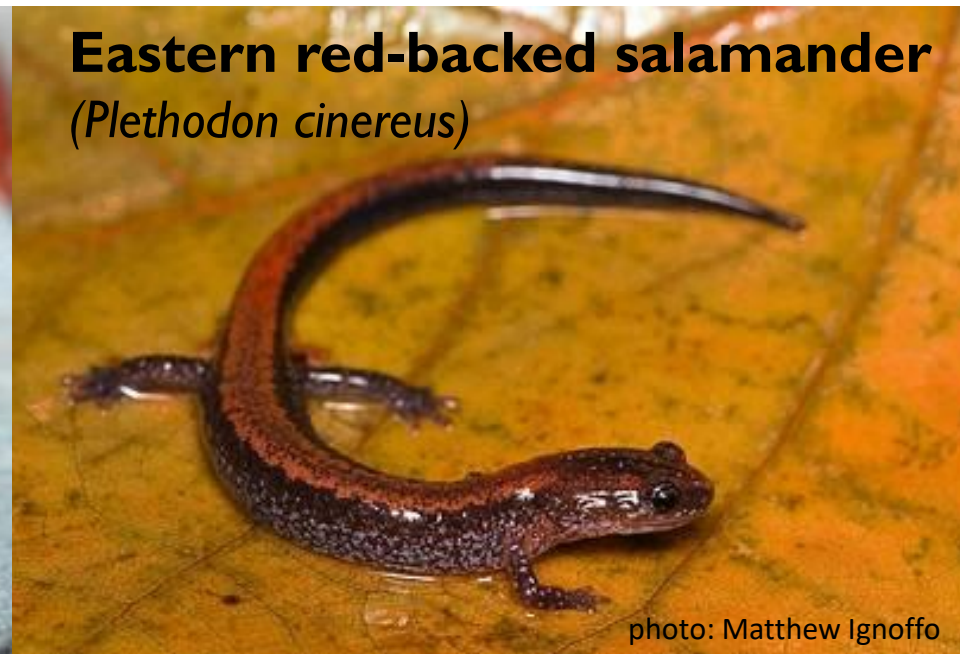
photo: Russ Cobb





**red eft (Eastern newt)**  
(*Notophthalmus viridescens*)

photo: Stone Horse Studios

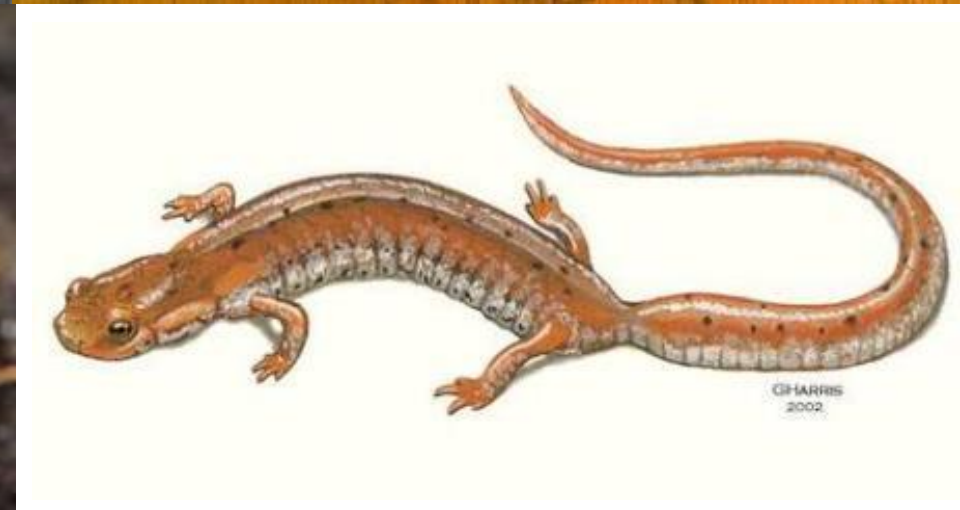


**Eastern red-backed salamander**  
(*Plethodon cinereus*)

photo: Matthew Ignoffo



**Northern two-lined salamander**  
(*Eurycea bislineata*)



**four-toed salamander**  
(*Hemidactylium scutatum*)



photo: timbriggsphoto.com

# AMPHIBIAN ROAD MORTALITY



**Canada:** 2 miles, 4 years, 30,000 dead amphibians

**UK:** 20-40% of breeding population die each year on roads

**Australia:** 5.5 million reptiles & amphibians roadkilled annually

**NY:** 50-100% mortality of salamanders attempting to cross a paved, rural road

**MA:** local extirpation of spotted salamanders due to road mortality within 25 years



# LOCATION matters.



Roadkill hotspots for amphibians and reptiles occur on **sites with wetlands within 100 m of the road.** (Langen et al. 2008).



# Salamander Crossing Brigades



photo: Vernal Pool Association





photos: Bruce Boyer, Amy Unger, Abigail Touchet

Many people report that experiencing the amphibian migration is a ***transformative educational experience***.



*by the numbers*

**1500+** volunteers  
trained since 2006



***by the numbers***



**60,000+ amphibians  
crossed since 2006**

**We can't carry every frog across every road.**



photo: Jess Baum



# Solutions?

Monkton Road, Monkton, VT



# Solutions?





# developing a road closure plan: *partners*



**Department of Public Works, including  
Highway Superintendent & City Engineer**

*in consultation with*

**Police Department**

**Parks Department**

*approval required by*

**City Council**

*vocal support from*

**community  
members**

A close-up photograph of a young child with blonde hair, wearing a yellow raincoat, holding a small, dark-colored frog with yellow spots on its back. The child is looking down at the frog with a focused expression. A bright light from a flashlight is directed at the frog, creating a strong highlight on its body and the child's hand. The background is dark and out of focus.

## message to City Council

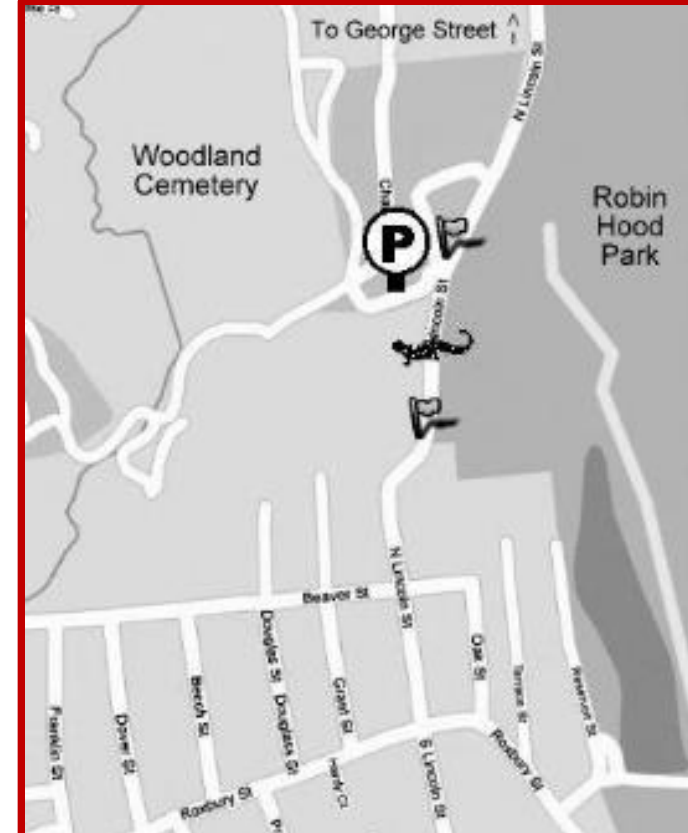
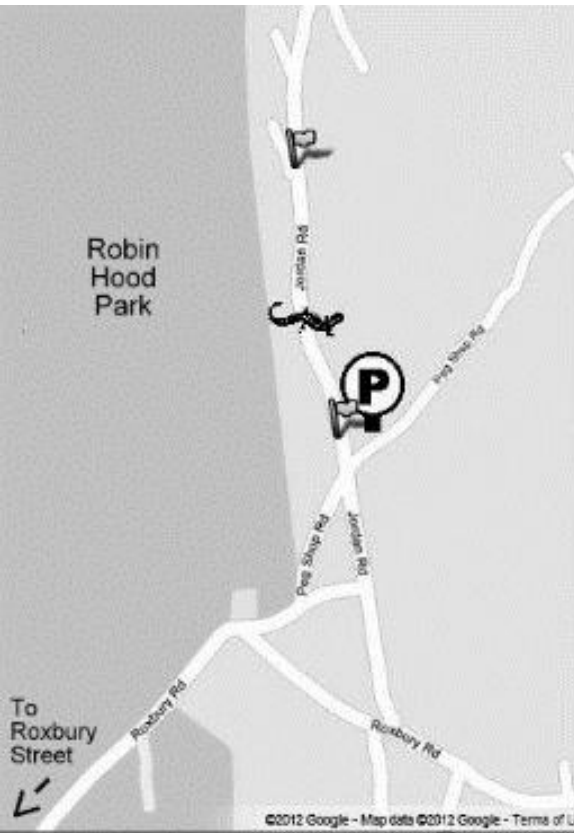
photo: Brett Amy Thelen

Temporary road closures would:

- (1) **protect amphibians** in the Robin Hood Park ecosystem,
- (2) create a **safe place for families** to observe the migration,
- (3) at **minimal cost** to the City.



# developing a road closure plan: *site selection*



**North Lincoln Street:** simplest detour, no homes impacted, largest number of amphibians.

# NORTH LINCOLN STREET





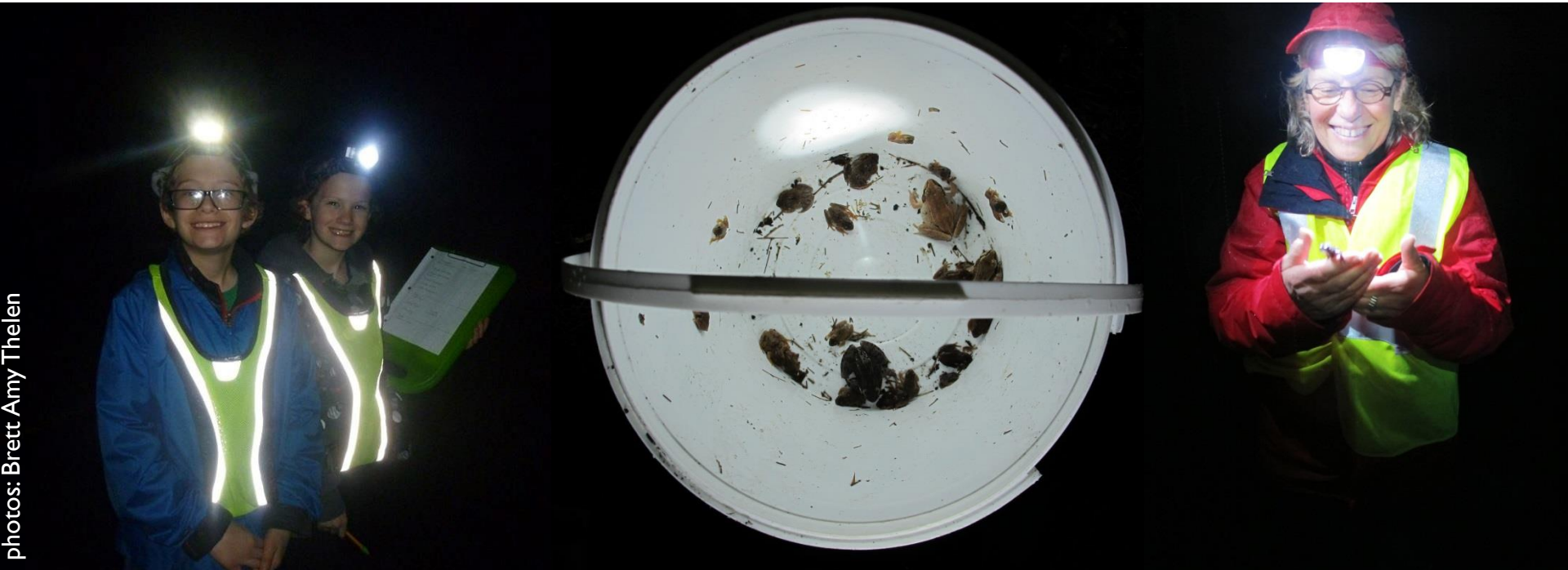
# NORTH LINCOLN STREET



drone photo: Bobby Williams



# on a typical “Big Night” at North Lincoln Street



photos: Brett Amy Thelen

**25** volunteers will move nearly **1,000** amphibians across a stretch of road that is only **0.1** mile long, in just **4** hours.  
Many ***families*** come to this site.



***by the numbers***



**NO. LINCOLN STREET**

**2006-2017**

**9,242 *live* amphibians**

**1,632 *dead* amphibians**

***by the numbers***

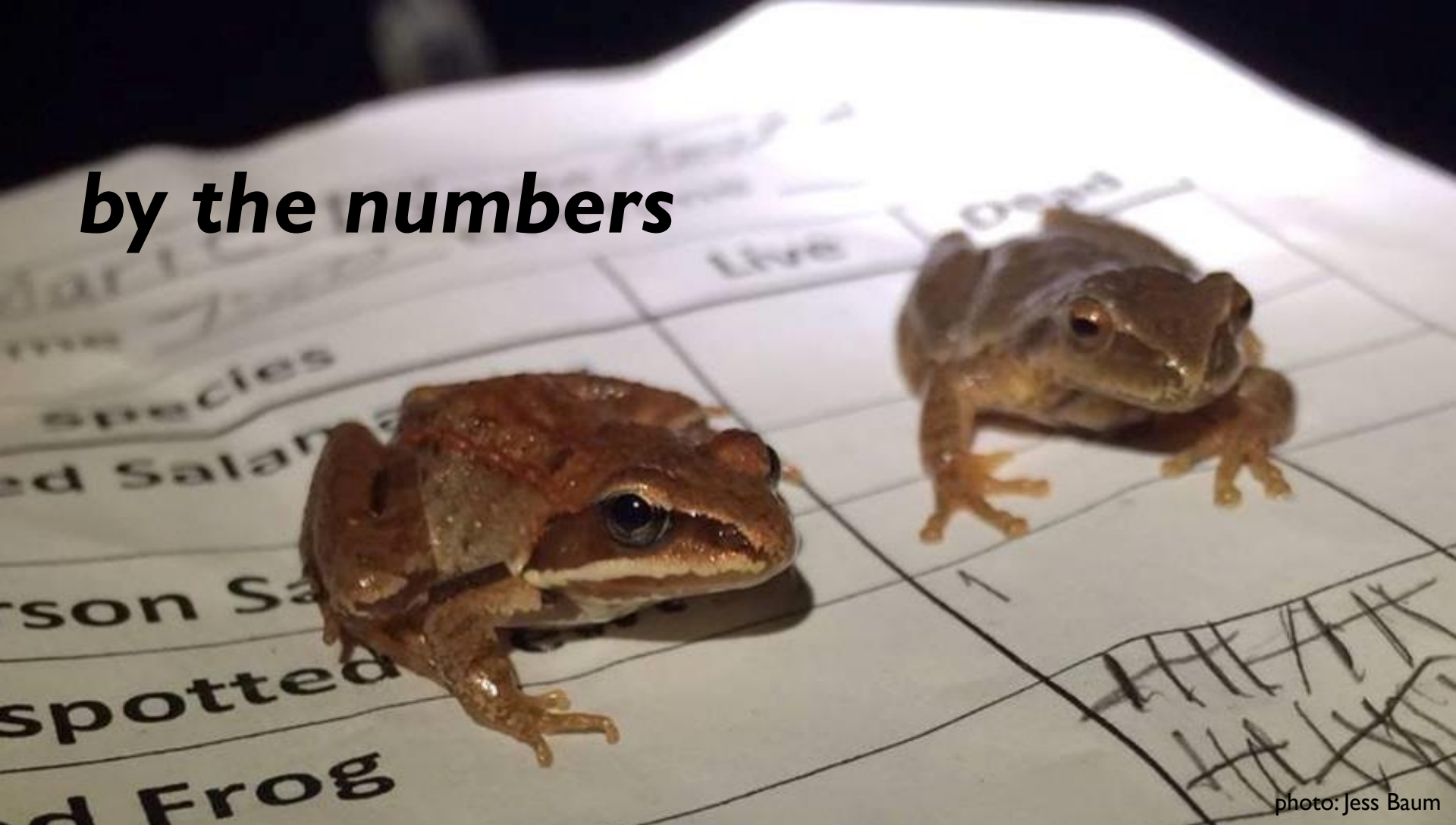


photo: Jess Baum

These figures are ***underrepresentations*** of what's actually happening on the roads on migration nights.

*variable volunteer effort*

*early evening only*

*dead often left uncounted*



# the road closure plan for **North Lincoln Street**

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**1. DETOUR**

**2. TIMING**

**3. FREQUENCY**

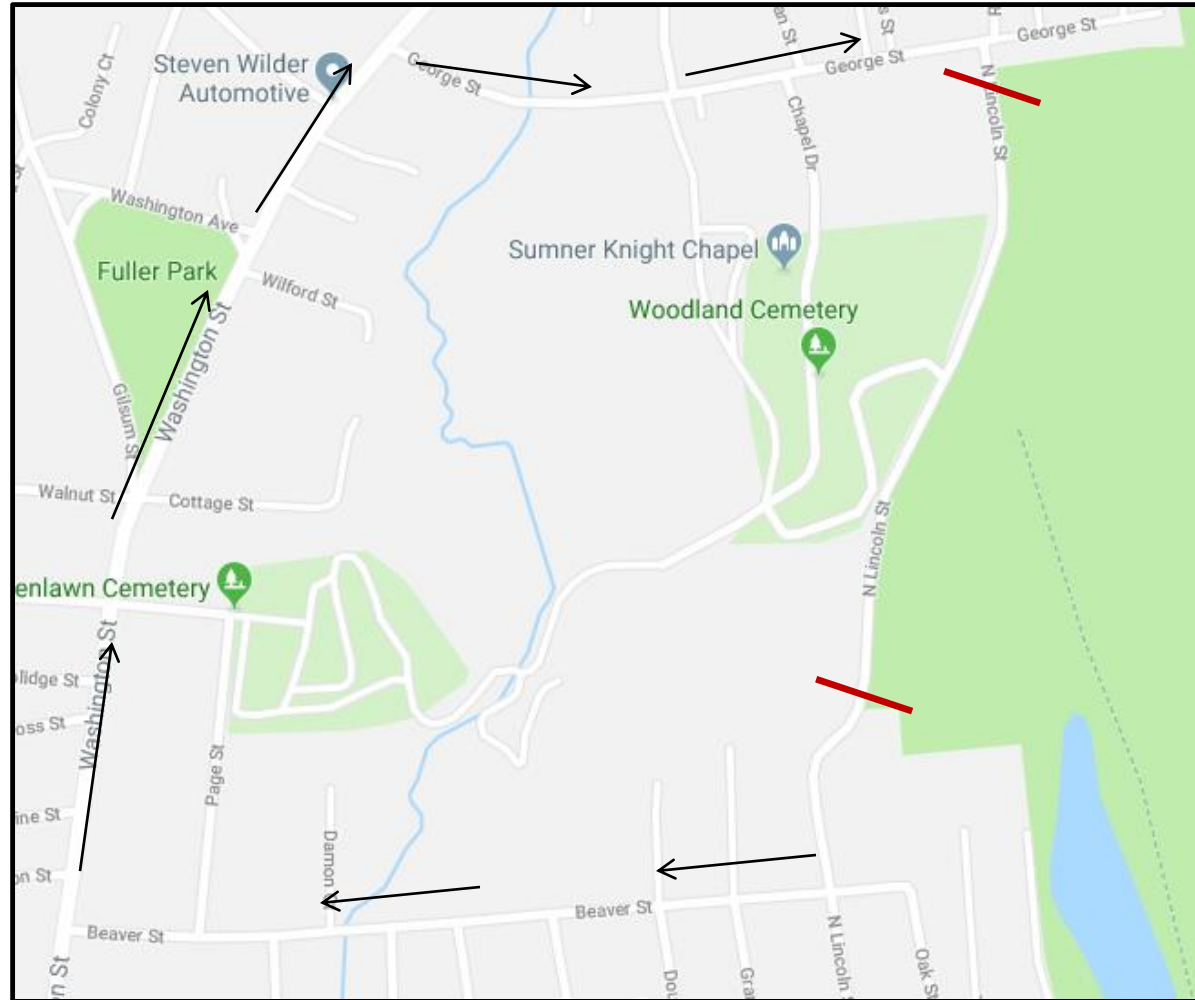


# the road closure plan for **North Lincoln Street**

**1. DETOUR**

**2. TIMING**

**3. FREQUENCY**





# developing a road closure plan: *implementation*



advance signage + A-frame barricades

# the road closure plan for North Lincoln Street

1. DETOUR

2. TIMING

3. FREQUENCY

Wednesday 3/24	Thursday 3/25	Friday 3/26	Saturday 3/27	Sunday 3/28
				
<p>■ <b>High Probability:</b> Get out your rain gear and reflective vest!</p> <p>■ <b>Maybe So, Maybe Not:</b> Watch the weather; it's a nail-biter.</p> <p>■ <b>Very Unlikely:</b> Too cold, too dry, or too snowy — there'll be no migration tonight.</p>				

- Decision by noon.
- Barricades staged ***before shift ends at 3 p.m.***
- Barricades placed by volunteers at dusk.
- Road re-opened at 7 a.m. the next morning.



# the road closure plan for **North Lincoln Street**

**1. DETOUR**

**2. TIMING**

**3. FREQUENCY**



photo: Sigrid Scholz

- 3 to 6 nights
- mid-March through late April

# road closure outcomes: *amphibian counts*

Species	3/29/18	4/12/18	4/25/18	4/27/18	5/6/18	Total
Wood Frog	420	443	67	10	24	964
Spring Peeper	349	300	209	79 (8)	17 (6)	954 (14)
Spotted Salamander	3	16	15	5	21	60
Red-backed Salamander	1	0	7	4 (1)	3	15 (1)
Eastern Newt	0	0	4	6 (2)	1 (6)	11 (8)
American Toad	0	0	10	2	1	13
Gray Tree Frog	0	0	0	0	8	8
Green Frog	0	0	1	0	0	1
Bullfrog	0	0	1	0	0	1
Total	773	759	314	106 (11)	75 (12)	2027 (23)

The most important thing about these numbers is that they are an underrepresentation – perhaps significantly so.

live (roadkilled)  
red = road open to vehicle traffic  
numbers represent crossings, not  
individual amphibians



# road closure outcomes: *public engagement*



## **traditional media**

*local newspapers*  
*statewide newspapers*  
*NHPR*

## **social media**

*City's most-shared posts*  
*reached 78,000 people*

## **in-person**

*20-50 visitors/night*



# *recommendations:* **planning**



**Start small.**



# *recommendations:* **planning**



**Start early.**

*recommendations:* **planning**



Cultivate community.



# Questions?



photo: Anna Miller

**Brett Amy Thelen**

Harris Center for Conservation Education  
[harriscenter.org/salamander-crossing-brigades](http://harriscenter.org/salamander-crossing-brigades)  
[thelen@harriscenter.org](mailto:thelen@harriscenter.org)