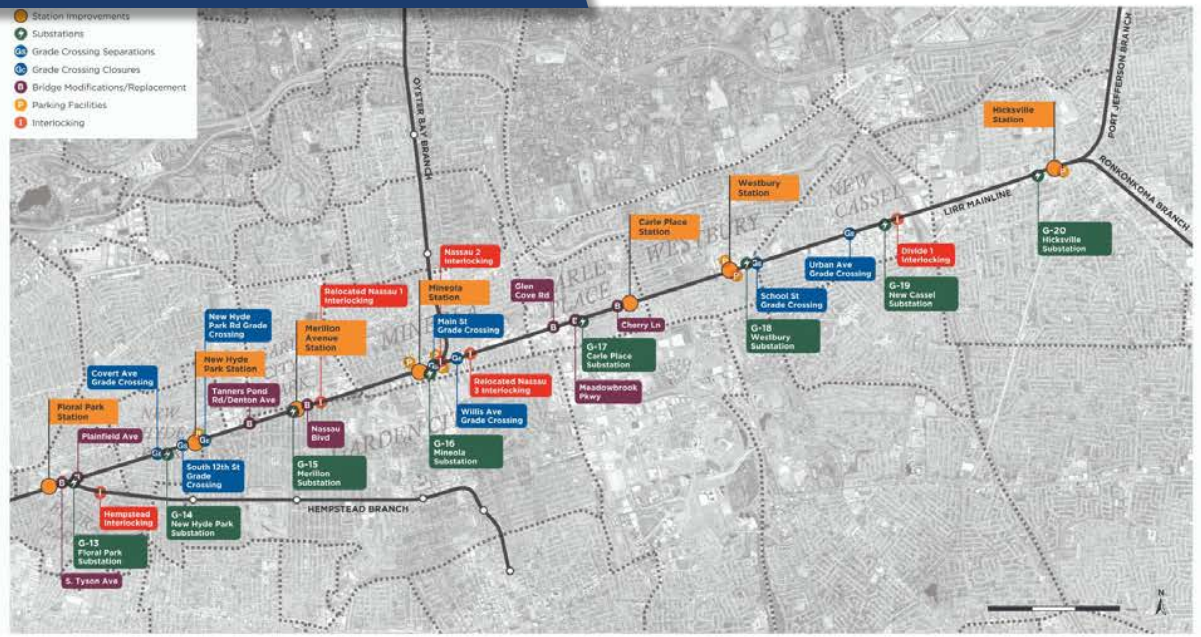
A Modern LI

LIRR Expansion Project
Floral Park to Hicksville

STEM Competition – February 2019



Purpose of the STEM Competition

- Foster relationships with the schools and students along the corridor
- Raise awareness and gain interest in the LIRR Expansion Project
- Encourage students to apply STEM studies to a real-world, local project
- Expose students to a wide variety of STEM professionals
- Solicit ideas for the Project's Community Benefits Fund

LIRR Expansion Project Overview

- MTACC and LIRR are beginning the construction of the LIRR Expansion Project from Floral Park to Hicksville.
- It will result in a third track along a 9.8-mile stretch of the railroad's busy Main Line between the Floral Park and Hicksville train stations.
- Key project elements include: the elimination of seven grade crossings, new parking facilities, upgrades to railroad infrastructure and passenger rail stations, new switches and signals, and other local improvements.

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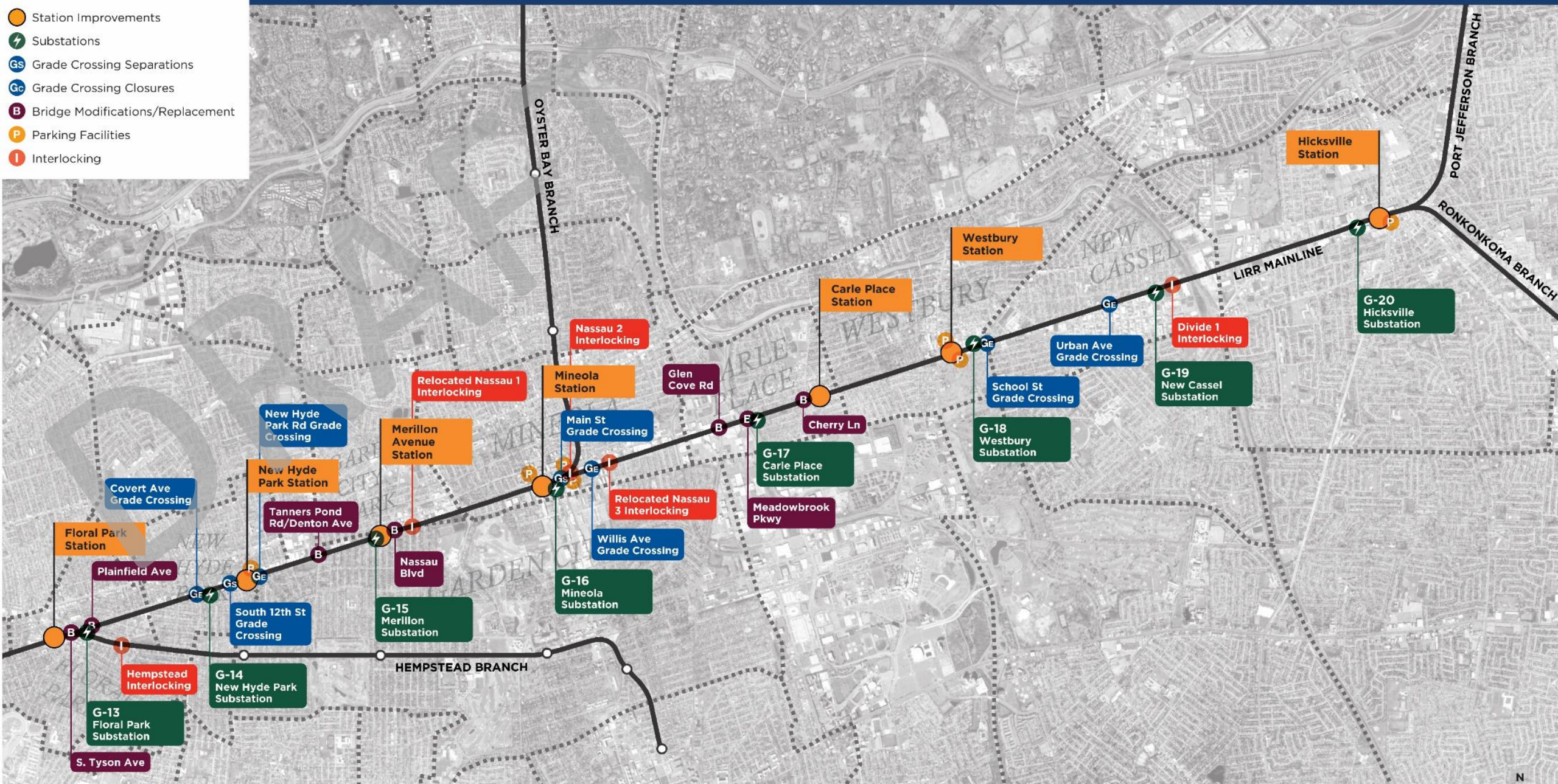
Major Project Elements



LIRR Expansion Project by the Numbers

Grade Crossing Closures	7
Bridge Replacements/Modifications	7
Station Improvements	6
ADA Elevators	13
Substation Replacements/Modifications	8
Interlocking Reconstructions	2
Retaining/Sound Walls	7.5 miles
Pedestrian Overpasses	6
Track	9.8 miles

LIRR Expansion Project Benefits

- A BETTER COMMUTE
- NOISE REDUCTION
- SAFER, QUIETER CROSSINGS
- LESS CONGESTION, CLEANER AIR
- STATION IMPROVEMENTS & INCREASED PARKING
- BETTER JOBS, STRONGER ECONOMY

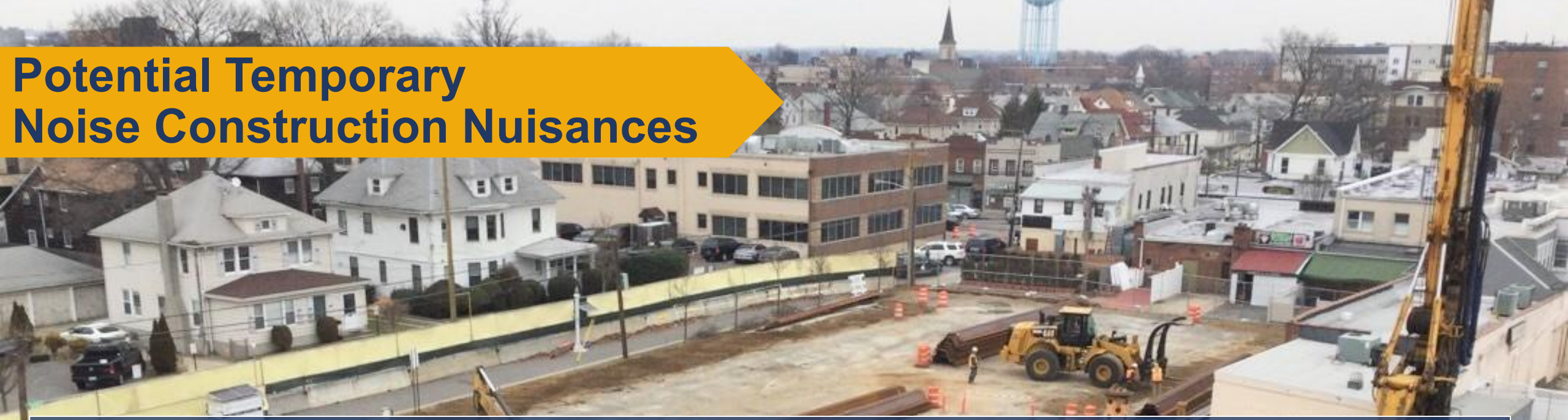
Construction Period

- While the LIRR Expansion Project will result in numerous benefits to the area once completed, it may result in temporary nuisances during construction.
- These may include temporary effects to:
  - Transportation
  - Noise
  - Quality of Life
  - Access to Local Businesses

Potential Temporary Transportation Construction Nuisances

- Construction will temporarily affect traffic and pedestrian flow.
- Grade crossing elimination construction activities will require temporary lane and roadway closures.
- Pedestrian connectivity across the tracks will be maintained at each of the grade crossings during construction or will be diverted to nearby crossings.

Potential Temporary Noise Construction Nuisances



- Construction may temporarily affect noise levels.
- Noise levels during construction will vary depending on the types of activity and equipment used.
- The design-build contractor is required to use noise and vibration control measures (such as substituting equipment with lower noise levels, temporary barriers, exhaust mufflers, etc.) to minimize the impact on the surrounding community.

Potential Temporary Quality-of-Life Construction Nuisances

- Construction may result in temporary eyesores.
- Large construction equipment, such as cranes, excavators, trucks, and construction sites would be visible to the public.
- Removal of vegetation within the LIRR right-of-way (ROW) may cause the ROW to become more visible from adjoining land uses.

Potential Temporary Construction Nuisances Affecting Local Businesses

- Construction may temporarily affect local businesses.
- Construction of Project elements may result in changes to parking availability, sidewalk access, and/or signage visibility.
- While the design-build contractor is required to ensure that access to existing business districts and individual businesses is maintained, construction may change typical access routes.

Community Benefits Fund

- The Community Benefits Fund (CBF) was created to alleviate construction period effects beyond the requirements of the Design-Builder's contract.
- Local Villages and Towns are able to apply to use the CBF in a variety of ways. Residents and community organizations are not eligible to apply directly to the fund, but they are encouraged to partner with their Village or Town to apply for a reimbursement.
- This STEM competition is a way for students to explore uses of the CBF.
- Your submission could turn into a real change in your community!

- Don’t forget to take time to learn more about the LIRR Expansion Project from Floral Park to Hicksville.
- The more you understand the LIRR Expansion Project, the better your entry will respond to the prompt.
- We invite you to explore:
  - http://lirrexpansion.com/
  - http://www.amodernli.com/project/thirdtrack/

Participating Schools

The competition will be open to 17 schools along the corridor.

School Name	School District
Floral Park Memorial High School	Sewanhaka Central High School District
Sewanhaka High School	Sewanhaka Central High School District
Our Lady of Victory School	Private
New Hyde Park Memorial High School	Sewanhaka Central High School District
Garden City Middle School	Garden City USFD
Garden City High School	Garden City USFD
St. Anne's School	Private
Mineola Middle School	Mineola UFSD
Mineola High School	Mineola UFSD
Chaminade High School	Private
Carle Place Middle Senior High School	Carle Place UFSD
Westbury Middle School	Westbury UFSD
Westbury High School	Westbury UFSD
St. Brigid/ Our Lady of Hope Regional School	Private
Hicksville Middle School	Hicksville UFSD
Hicksville High School	Hicksville UFSD
Trinity Lutheran School	Private

STEM Competition Framework

- Participants (teams of 1 through 5) will respond to a prompt.
- Participants can respond through a:
  1. Poster Submission; or
  2. Short Video Submission
- Participants can be from Grades 6 through 12.
- Submissions will be judged based on grade level.

STEM Competition Prompt

- If you had a budget of $10,000, how would you like to see the Community Benefits Fund used in your community during the construction of the LIRR Expansion Project with respect to:

a) Noise;
   - *For example, how would you reduce construction noise near to the Main Line tracks?*

b) Quality-of-life;
   - *For example, how would you offset visual impacts of construction activities?*

c) Local businesses; or
   - *For example, how would you encourage patronage at local businesses affected by construction activities?*

d) Other

Poster Contest

- Participants will provide a written description of their concept and why it would be important to their community
- The size of the poster should be 30″ wide x 20″ tall
- Each poster must include:
  - Problem
  - Solution
  - Implementation
  - Personal reflection (why did you choose this topic and solution)
  - Original Figures/Drawings/Visuals
  - Itemized budget for solution
  - Reference section on the back of the poster, if applicable
- Participants can submit an optional clarification sheet with more information if it cannot fit on the poster.

Title (font size to not exceed 100)

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LIRR Expansion Project
Floral Park to Hicksville

Your names (font size to not exceed 60)

School (font size to not exceed 55)

Problem (headers to not exceed font size 50)

Includes background, problem at hand, (font size between 35 and 45)

Solution

Solution to problem (font size between 35 and 45)

Implementation

How will solution be implemented (font size between 35 and 45)

Personal Reflection

Why was this topic and solution of interest to you? (font size between 35 and 45)

Figures

This includes an original illustration of your solution pictures, or any visuals. *This section will enhance your poster – try to fill up as much blank space as possible with visuals!

Poster Judging Rubric

- **Posters will be judged based on:**
  - **Applicability** – Is the solution applicable to a construction nuisance related to the Project?
  - **Practicality** – How practical is the solution?
  - **Clarity**– How well does the poster explain the solution?
  - **Creativity** – How creative is the solution?
  - **Impact of the display**– How well is the poster designed?

Video Contest

- Participants will produce a short video (no more than 2 minutes) to describe their solution and why it would be important to their community
- Each video must include a description of the:
  - Problem
  - Solution
  - Implementation
  - Personal reflection (why did you choose this topic and solution)
  - Itemized budget for solution
- Communicate the idea in an engaging and imaginative way
- Separate reference section, if applicable
- Optional clarification sheet for more detail

Video Judging Rubric

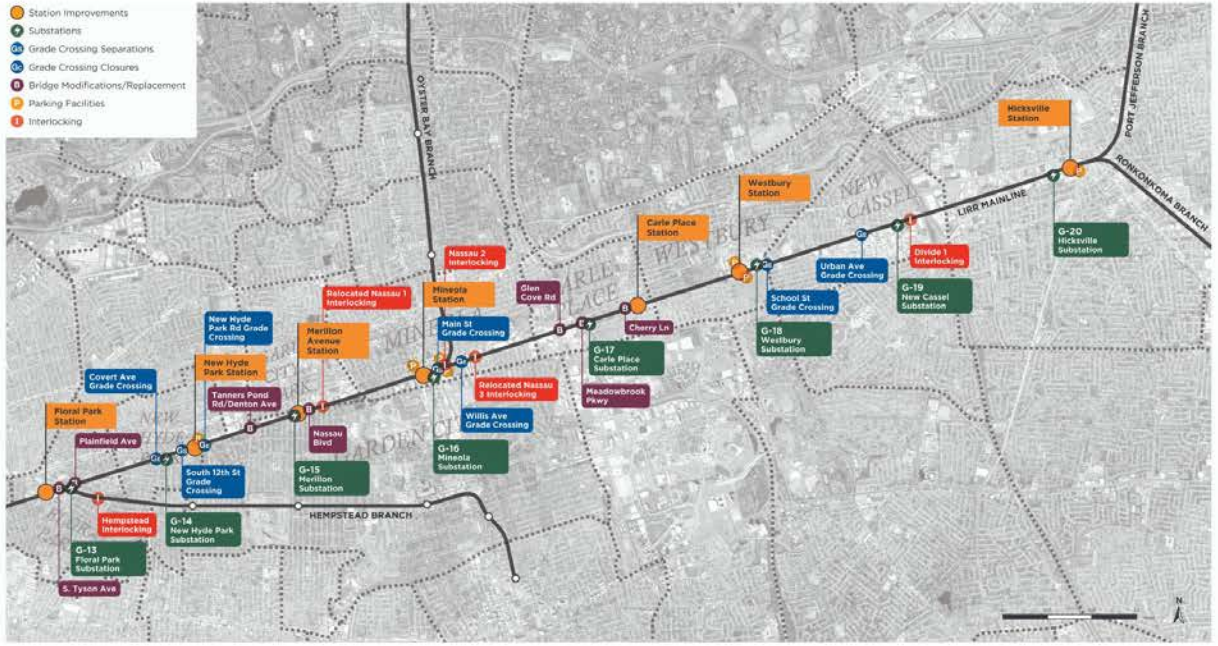
- **Videos will be judged based on:**
  - **Applicability** – Is the video applicable to a construction nuisance related to the Project?
  - **Practicality** – How practical is the solution?
  - **Clarity**– How well does the video explain the solution?
  - **Creativity** – How creative is the solution and video?
  - **Production** – What is the overall quality of the video?

Timeframe

- Announce competition: February 1, 2019
- Enroll by: February 28, 2019
- Require submissions by: April 15, 2019
- Announce final winners: May 2019

- To register or for additional information, contact us at:

STEM@mainlineep.com



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Thank You