



**Local Concept Development Study for Retaining Wall & Slope  
Stabilization Improvements along Manhattan Avenue,  
Union City, Hudson County, New Jersey**



**COMMUNITY STAKEHOLDERS MEETING NO. 1  
MEETING REPORT**

DATE: Wednesday July 18, 2018  
 TIME: 7:00 PM  
 LOCATION: William V. Musto Cultural Center  
 420 15<sup>th</sup> Street, Union City, NJ 07087

**ATTENDEES:**

<b>LAST NAME</b>	<b>FIRST NAME</b>	<b>ORGANIZATION</b>
Anderson	Clyde	Doric Apartments, Union City
Bonanno	Nicholas	Resident, Union City
Fleisher	Douglas	Resident, Union City
Francese	Greg	Transportation Planner, Hoboken
Freay	Martha	Resident, Union City
Graham	Pam	Resident, Union City
Graham	Pete	Resident, Union City
Kennedy	Meredith	Resident, Union City
Knoedler	Erin	City Clerk, Union City
Koch	Rich	Doric Apartments, Union City
Malkowski	Ana	Resident, Union City
Malkowski	Michael	Resident, Union City
Mema	Jose	Resident, Union City
Meyer	Dan	Resident, Union City
Meyer	Rachel	Resident, Union City
Molinari	Richard	Chief of Police, Union City
Orbe	Natalie	Resident, Union City
Rolon	Jose	Resident, Union City
Salamonca	Felisa	Resident, Union City
Salamonca	Jerry	Resident, Union City
Sparkman	John	Resident, Union City
Stack	Brian	Mayor, Union City
Tango	Ralph	City Engineer, Union City
Velazquez	Alex	Mayor's Chief of Staff, Union City





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<b>LAST NAME</b>	<b>FIRST NAME</b>	<b>ORGANIZATION</b>
Behrend	David	North Jersey Transportation Authority (NJTPA)
Brundage	Richard	North Jersey Transportation Authority (NJTPA)
Frimpong	Sascha	North Jersey Transportation Authority (NJTPA)
Harshbarger	Patrick	Hunter Research Group
Moren	Jon	French & Parrello Associates (FPA)
Pace-Addeo	Nicole	Stokes Creative Group
Piel	Robert	Amy S. Greene Environmental Consultants
Pisani	Anthony	Hudson County Engineering Dept.
Pyontek	William	French & Parrello Associates (FPA)
Septon	Daniel	French & Parrello Associates (FPA)

**PURPOSE OF MEETING**

The purpose of this meeting was to obtain input from community interests associated with the Manhattan Avenue Retaining Wall to develop the Project Purpose and Need and to establish project goals and objectives.

**MEETING SUMMARY**

The following is a transcript of the verbal presentation:

1. Welcome and Introductions

Jon Moren, FPA Deputy Project Manager, opened the meeting on behalf of Hudson County, and the cooperating agencies of North Jersey Transportation Authority (NJTPA) and the New Jersey Department of Transportation (NJDOT).

- (a) After introducing the project team members, Jon provided an overview of the Project. He explained that there are two retaining walls included in the ongoing study – the South Wall and the North Wall. The South Wall is located on the south side of the 14<sup>th</sup> St. Viaduct (South Wing Viaduct) and the North Wall is located on the north side of the 14<sup>th</sup> St. Viaduct (North Wing Viaduct). The South Wall typically gets significantly more traffic than the North Wall. The traffic counts indicate that there are over 20,000 cars per day that utilize the South Wing Viaduct, while the North Wing Viaduct only gets around 7,000 cars per day.
- (b) The usages at each wall are somewhat different. The North Wall has parking on both the east and west sides of Manhattan Avenue. The South Wall roadway is basically the same width as the North Wall but doesn't allow for parking as Manhattan Avenue in that section as it is dedicated to commuter traffic in and out of Hoboken.





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### 2. Purpose and Need

Jon Moren, FPA Deputy Project Manager, explained the requirement to develop a Purpose and Need Statement for the Manhattan Avenue Retaining Wall Project and the need for the community to be involved with this process. The local community lives here and has a better understanding of what the needs are. This project is likely going to cost millions and millions of dollars – so we want to make sure we get it right. The existing wall was constructed in 1912 and is over 100 years old and, unfortunately, there have been some issues with it. This wall is not going to last forever, so we need to plan for its replacement.

**PURPOSE:** The main purpose of the project is to repair or replace the structurally deficient wall. It's not of any imminent risk to the public with regard to failure. Again, we just went out and looked at the wall. We've done an existing conditions evaluation, which is part of this process, and prepared a report, which we just gave to Hudson County for their review. We found a couple of things that we want to see fixed. There will probably be some interim repairs that will be implemented to maintain the wall, while we go through this Local Capital Delivery Process (LCDP).

**NEED:** As far as possible needs for the project, we made some attempts to articulate what we think they should be. There should be a need for modernization of the wall. The stone masonry wall is over 100 years old and we've looked at some of the previous inspection reports, and some of the connections that are holding the stones to the wall are an advanced deteriorated state.

There are also some issues with the gravity walls that are on top of the wall, which we believe contributed to the collapse in 2007. Another issue that we feel should be addressed is that there's not adequate drainage behind the wall. It currently has weep holes that are plugged and not functioning.

Understand that we are now at the Local Concept Development (LCD) Process. We need to get to the Preliminary Engineering (PE) phase. And in order to get through that process we need to develop the Purpose and Need and develop alternatives that everybody can support. Ultimately, we're looking for support from the municipalities on the particular alternatives that we all select.

### 3. Goals and Objectives

Jon Moren, FPA Deputy Project Manager, explained that some of the Goals and Objectives that we are looking at are to reinforce and modernize the wall, improve drainage, maintain accessibility for the pedestrians and bicyclists, and try to inconvenience the traveling public to the least extent possible by selecting a good alternative that makes a lot of sense. He explained that we want this to fit in with the future -- and the current -- state of Union City, as well as the growth that Union City wants to see. This is Union City's opportunity to have somewhat of a blank canvass to see if you want to have a different appearance of the wall. We want, as part of our community involvement, for you guys to help us with our purpose and need statement.





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### 4. Repair Alternatives

William C. (Bill) Pyontek, FPA Project Manager, presented the various repair alternatives that were being considered and evaluated by the project team. He explained that the Team is looking at five different repair alternatives and four different architectural finishes.

To understand these proposed repair alternatives, it is necessary to know what currently exists at the site. Manhattan Avenue is a 36-foot wide roadway that was originally constructed by cutting through a rock slope along the top of the Palisades Cliffs in Union City. The rock cut on the west side of the road was lined with a mortared stone facing wall. To level off the properties behind the wall, they built a gravity stone retaining wall at the top of the cliff. On the east side of the roadway there is a 6 to 8-foot wide sidewalk. The South Wall is about 1,850 feet long and the North Wall is about 860 feet long. The area above the South Wall is mostly open, while the area above the North Wall is built up with structures including parking lots, a swimming pool, a patio, and a garage.

**Repair Alternative 1A – In-Place Rehabilitation Without Slope Stabilization:** In this alternative, we would first install a temporary retaining system behind the existing gravity wall to minimize the impacts to the structures above the wall during construction. We would then remove the gravity wall, stabilize the edge of the cliff, and provide a level platform on top of the cliff by pouring concrete footings tied back with rock anchors. We would then construct a new concrete retaining wall that would be faced with stone to match the existing appearance. On top of the retaining wall we would put a new concrete parapet, like the walls had originally. You can see this original parapet on top of the North Wall. This parapet was previously removed from the south wall, but it remains on the north wall. So, with all these options we consider putting back a concrete parapet and matching the existing, original appearance. The stone facing wall would be tied back with masonry anchors and we would also replace the weep holes that are rusting and clogged with new PVC weep holes.

The benefits of this option are that it would eliminate the need for wall demolition and be at a reduced cost when compared to some of the other alternatives. It also could be done in accordance with Secretary of the Interior standards and be more desirable to the State Historic Preservation Office (SHPO), which we will have to get a permit from.

The drawbacks are that it does not improve the mismatched appearance of the wall. When they did previous repairs on the wall, they removed some of the original stones and installed new stone that did not match the original stone. With this option those mismatched repairs would remain. It also does not enable installation of new drainage system behind the wall. It would just be the same weep holes, that could get clogged over time and require maintenance.

**Repair Alternative 1B – In-Place Rehabilitation with Slope Stabilization:** This Alternative would be similar to Alternative 1A, except that we would install concrete buttresses at regular intervals, in order to strengthen the wall. To do this, we would have to remove some of the stone and perform rock excavation behind that, so that we can put a new drainage system behind it and





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pour a reinforced concrete buttress which would be anchored back to the cliff, so we can strengthen the wall. We would still have to install masonry anchors to tie back the facing wall and would also replace the existing decorative concrete parapet. We would also need a concrete barrier at the base of the wall for traffic safety

This benefit of this alternative is that minimizes wall demolition, and also reinforces the rock cliff behind the existing wall to prevent fractures. It also enables installation of a new drainage system.

The drawbacks are that it modifies the existing appearance of the wall. The stones in front of the concrete buttress will protrude from the face of the wall and may slightly reduce the roadway width. It also requires a significant rock excavation to install the drainage system behind the wall.

**Repair Alternative 2 – Construct New Wall in Front of the Existing Wall:** This alternative would involve the construction of a new retaining wall in front of the existing wall. The existing stone wall would be buried and then we would build a new reinforced concrete wall in front of it and tie it back to the rock cliff. In the space between the existing stone wall and the new concrete wall, we would put the drainage material and pipes that would drain to new proposed inlets along the roadway. With this option, we would have to move out the existing curb line. We would have to shift the roadway over to make room for the wall and still maintain a 36-foot roadway. It would be a four or five-foot shift. We'd build a new sidewalk, retaining wall and parapet on the east side with a fence. Also, the utility poles would get relocated.

The benefit of this option is that it eliminates the need for wall demolition and the temporary retaining system. This would have a lesser impact to the properties that are behind the wall, and no impacts to existing structures above the wall.

The drawbacks are that it would require roadway realignment and shift to the east to provide additional space for the new wall. It also does not maintain the existing historic appearance of the wall, because we're burying the original stone. Another drawback is that it requires replacing some of the retaining walls on the east side of Manhattan Avenue. We may have to do something special around where the 14<sup>th</sup> street bridge is.

**Repair Alternative 3 – Remove & Replace Existing Wall:** This alternative would involve the removal and replacement of the existing retaining wall. We would remove the stone and build a new concrete wall in front of the cliff. Between the cliff and the new wall, we'd put a new drainage system in. This would require a temporary retaining system, so we could perform this excavation to remove the existing gravity wall on top of the cliff.

The benefit of this alternative is that it maintains the existing roadway alignment so that we don't have to shift the sidewalk and build new retaining walls on the east side. It eliminates all the hidden risks associated with the existing wall because we are removing it. We could then reuse the existing stones to maintain the existing appearance. The State Historic Preservation Office would like that.

The drawbacks are that it would impact the existing structures that are built above the wall on the retained soil.





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**Repair Alternative 4 – Remove the Existing Wall:** This alternative involves the removal of the existing stone retaining wall and exposing the existing Palisades cliff. This eliminates the need for the long-term maintenance of the retaining wall.

The drawbacks are that it impacts the aesthetic appearance. You would see a rock cliff. There are also many unknowns about this option. The rock cliff is buried. We can't see what's really behind the stone wall. So, there's risks of encountering unknown conditions, once demolition work begins. And it may require additional work to stabilize the face. We may have to install rock anchors. We may have to put concrete in some areas. We may have to put a rock-catch fence in front of it, which has been done in some areas in the Palisades Region.

### 5. Architectural Finish Alternatives

**Architectural Finish Alternative #1 – Hand Sculpted and Stained Shotcrete:** An example of this finish can be seen on Route 18 in New Brunswick along the Raritan River. This finish involves the construction of a shotcrete wall – and by shotcrete it means they sprayed the concrete on a wire mesh. Then artisans can sculpt the shotcrete with hand tools to recreate any desired finish, such as a rock outcrop finish or stone finish. We can even recreate, out of concrete, the exact stone pattern that's out there.

**Architectural Finish Alternative #2 – Decorative Concrete Form Liner:** This finish was utilized during the 2008 repair. They poured concrete with a form liner. And a form liner is just a repeated pattern. The form liners come in four-foot by eight-foot sheets that are placed on the concrete forms before pouring the concrete. You can get whatever shape or pattern that you want. You can also stain the concrete or add color to the mix.

**Architectural Finish Alternative #3 – New 6" Stone Veneer:** This alternative involves the installation of new stone masonry (6" thick). These stones would be attached to a new concrete wall. We would anchor those stones to the wall, either by dovetail anchors or with corrugated straps. It should be noted that the existing stone is a diabase basalt, which is not quarried anymore except in China or some other countries. It's very expensive to blast it and its very hard rock. But we could get stone that would be a close match to the existing.

**Architectural Finish Alternative #4 – Reuse Existing Stones:** This alternative would only be applicable for the repair alternative, where we take down the existing wall and rebuild a new one in its place (Repair Alternative #3). Before we take down the existing wall we can number each stone and take photos, and maybe even a laser scan, and then those stones would be cleaned and stored and put back up in the same order as they exist.

### 6. Detours

Some of these alternatives will require road closures and detours. The closures would be done at night (off-peak). During the day, we would close down one lane, and that might be permanent throughout the job, but we would always maintain one lane in each direction. We would work on





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either the South Wing at one time or the North Wing, so we wouldn't be doing work on both walls at the same time.

- (a) The existing route to travel from the 14<sup>th</sup> Street Viaduct to 16<sup>th</sup> Street is about 0.5 miles long and would take two minutes to drive. The detour that we are proposing would be via the South Wing to Paterson Plank Road to Palisade Avenue and would be about 0.7 miles longer than the existing route and will require 3 to 5 extra minutes of travel time – but that's without traffic. It should be noted that this would be done during off-peak hours.
- (b) For the South Retaining Wall repairs, the existing route to travel from 14th Street to Paterson Plank Road is about 0.7 miles and would take about three minutes. There are 2 possible detour routes that can be utilized; one through Hoboken, and one through Weehawken. Both detours will be about two miles longer than the existing route and will require 7 to 13 extra minutes of travel time. Obviously, there will be other ways to bypass the work zone depending on what time of day you're in the area. We're going to sign the detour as we talked about – either through Hoboken on Willow, or through Weehawken.
- (c) There are other high-level transportation projects that may be going on in the region that will affect traffic along Manhattan Avenue and the 14th St. Viaduct and we are going to have to coordinate with those projects to minimize traffic disruptions. The Helix project is obviously something we'll have to keep an eye on because their proposed schedule is similar to our project's schedule and they could potentially be going on at the same time. Obviously, we anticipate the 495 Project to be completed long before this project is implemented. And, lastly, we are aware of the Gateway Tunnel Vent project that's about a half mile from our project site, but that is so far out in the future that we really don't think that our schedules will be in conflict.





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### QUESTION & ANSWER SESSION

The following is a transcript of the Question and Answer period which followed the presentation:

1. UNION CITY ENGINEER: Those in attendance tonight are going to be asked to pick their preferred design and finish options. But the attendees must first understand each alternative's possible impact on the community. During the presentation, FPA said Alternative 1B required rock excavation in order to install concrete buttresses. How will the rock be excavated? By drilling or blasting? And with Alternative #3 and #4, FPA said the existing structures above the wall would be impacted. Will these residents lose their garage or pool? People need to understand how they may be impacted by the proposed work.

FPA: There are ways of excavating rock that are not vibration induced. There is an option to drill holes and insert expansion grout material that would break the rock free. We don't have to use dynamite to blast away rock. There are ways to excavate the rock that are less disruptive but will still be somewhat disruptive nonetheless. Regarding the impacts to the properties above the wall, when we talk about the garage, the pool or the retaining walls that contain parking lots above the wall, we may have to take those structures and physically move them back onto the properties.

2. UNION CITY MAYOR: If I have a garage or a swimming pool that abuts the wall, would you make me pay to move that?

FPA: Technically, some of these structures encroach into Hudson County's right-of-way. The structures are not on their own properties.

UNION CITY MAYOR: But many of these structures were built many years ago and the homeowners have nothing to do with it. When you say some of these structures would have to be moved over, you would rebuild them? Would you would rebuild somebody's swimming pool?

FPA: Yes, we would. Let's say for example with Alternative #3, there's a wall here that's been constructed, but we would take that wall and reconstruct it a foot within their property and there would be no charge associated with that. That's something that would be picked up as part of the project cost. If a garage is half of a foot onto the County right-of-way and it doesn't need to be removed as part of this project, then it won't be removed. An agreement will be struck between the property owner and the County regarding the right to have that structure encroach on the right-of-way. The other thing we noticed were parking spots. People are parking along the top of the wall. If we're going to take those parking spaces as a temporary easement, there could be compensation worked out for the loss of the ability to park there.

3. RESIDENT #1: I appreciate that you have given us plenty of notice for this meeting, but I think you should have asked for our input a little sooner. The wall is iconic. I grew up in Hoboken and now live above the wall. I don't want to see it change. You can fill in the cracks with hydrostatic grout and I think stop 95% of the water from getting behind the existing wall.





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It seems to me option 1A is the best way to go. The wall is a historic structure and shouldn't be changed.

FPA: To address your first comment, this is not too late. This is just the beginning of the process. It's going to take six years to get through the process, before we go to construction. None of these options are being considered as a preferred alternative. The whole purpose of this meeting is to show people what is possible to get their thought processes going. With the shotcrete alternative, you have the option of creating whatever you want. The current wall is beautiful and has many aesthetic qualities that can be maintained with some of these other options. It will still look the same, but just be safer.

4. RESIDENT #2: I went through the wall collapse of 2007 and was unable to get into Hoboken for months, so we're well aware of how much traffic can be affected on Manhattan Avenue. The best option would be to hold onto the existing stone because it's unique and no longer being quarried. It's obvious the repair work done over the years is very different from the original stone. But I'm most concerned with the traffic on the South Wing Viaduct. While technically it's three lanes, in practice it's more like two, because of the way traffic behaves. Traffic is always backed up there. I'd like to see the sidewalk on the east side of the South Wing Viaduct moved over another five feet and increase the width of each existing lane by at least one foot and give another six-foot-wide sidewalk on the other side to service the dramatic increase of pedestrian traffic into Hoboken over recent years.

UNION CITY MAYOR: On the sidewalk there should be some type of barrier. You can put up some nice-looking barriers that protect pedestrians walking down the viaduct, because you can jump that curb pretty easily. I didn't want to sway anyone because I am the mayor, but I agree with the comments about keeping the wall. It represents what Union City is about.

FPA: These alternatives are only conceptual in nature. There can be other alternatives that incorporate the feedback we get from you. If the desire is to provide some pedestrian protection, we can add that to our Purpose and Need statement.

5. RESIDENT #3: It seems like only Alternative #2 addresses building a stronger retaining wall on the east side of Manhattan Avenue.

FPA: That's because we have to build the new wall in front of the existing wall, which requires shifting the roadway and sidewalk to the east. In some places that would require building a new retaining wall on the east side of the of Manhattan Avenue to support the expansion. But it's only in certain areas. In other areas where no retaining wall exists we would just expand the sidewalk.

6. RESIDENT #4: Regarding Alternative #2, you talked about building a new wall in front of the existing one but didn't mention if that would take care of the drainage problems.

FPA: The plan would address the drainage issues. Between the existing and proposed wall, we'd install a drainage system.





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7. RESIDENT #4: I agree with wanting to keep the wall the way it was supposed to look, but how realistic is that idea if you've lost a huge chunk and there's a patchwork of different types of stone throughout? How realistic is it to try and repair the existing wall and make it look uniform?

FPA: One of the things we talked about was not removing the 2007 repaired section, but instead try to blend it in by using stain to try and make it look similar to the rest of the wall. Obviously that portion is not in any kind of structural distress. But there is the potential that if we were to build a new wall in front of the existing wall, we could just install stone facing on the 2008 portion. If the idea is to provide continuity of appearance throughout the wall, that is certainly something we can strive for as a goal.

8. RESIDENT #5: Just to follow up on that, were you able to find any historical documents pertaining to why they built the wall in the first place? Do we know if, at the time, they considered the underlying Palisades rock face to be unsafe?

HUNTER RESEARCH: At the time, the Manhattan Avenue walls were called 'Contract 2' and 'Contract 3' of the 14th Street Viaduct project, which was plagued with corruption and labor unrest. Unionists set off dynamite several times because the contractors were trying to run a non-union job. Shortly after the Viaduct was finished – and before construction on the wall began – Hudson County got caught up in a corruption scandal and several Freeholders were indicted by the state. It took several years to get the project going again. However, most of the County records during this period disappeared. We do know that originally, they planned a concrete wall, but for some reason changed their minds and built a stone wall. The choice of the material used for building the wall does not seem fitting with the time. Concrete makes perfect sense for the early 20th Century – it was a brand-new material. Using quarry-based stone of this size would have been incredibly labor intensive to build that big of a wall. It's sort of anachronistic. They're almost using a technology that would have been used one hundred years earlier. It makes the wall really interesting and part of history, but it's hard to figure out why that decision was made. One possible reason is that it would have produced a large amount of labor – the project hired a lot of masons to do the work.

9. RESIDENT #7: Cost? It sounds to me like – \$40 million, \$10 million – there are big numbers here and there are big differences. I don't feel prepared to vote. Last meeting none of this was here. Now all of a sudden it's, 'Well, what do you like?' I don't know what I like. I can't ask all my questions in 15 minutes and then give you a dedicated answer. Are you going to eliminate some of these alternatives tonight? There are many people who can't be here on short notice.

FPA: No, but we're trying to focus our efforts and tailor this process. So, if we can eliminate one of these alternatives, that's a good thing to do.

STOKES: One of the most important elements of this project is community involvement and that's why we're having this meeting. Some of you may have already been to the website





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(ManhattanAvenueWall.com) and for those of you who haven't, there is a survey and a comment form. And as much as we appreciate your time and feedback tonight, we encourage all of you to go to the website and fill out the survey and comment cards, so that way we have a written testimony from you.

10. RESIDENT #8: That makes a lot of sense. I live in a building of 12 people. There are two here tonight. I can get people to go to websites – it's hard to get people to go to meetings. I would appreciate a week to look at the alternatives and decide what I like. I'm afraid you're going to eliminate an option tonight, that might end up being the best one.

FPA: That wouldn't be the case. We have to do our due diligence. We're trying to understand what you'd like to see. We found out tonight that if we can widen Manhattan Avenue, that would be a desirable thing. That will make it into future versions of what we present. This is just the start. These alternatives are just entry level ideas. If we see feedback on the website, we'll present it. Each one of these has impacts that we must assess. For example, there will be right-of-way impacts and traffic impacts. It will come down to what we can all tolerate. In the end, we still are responsible to convince the funding agency that the alternative makes sense.

UNION CITY MAYOR: There will be other meetings, right? You expressed to me earlier, that there will be other meetings, so for the people that aren't here tonight, they'll have a chance to participate in the same process.

FPA: We plan on having a supplemental meeting that we can make available in a couple weeks to talk to others.

11. RESIDENT #9: Is this really one project? Do the North and South walls have such similar issues, that they need to be dealt with the same way?

FPA: They do have similar issues. There is missing mortar, bulging areas and seepage coming through the wall.

12. RESIDENT #9: It seems the issues raised regarding the North Wall are very different from those of the South Wall.

FPA: There may be a combination of repairs. We may be able to rehabilitate a portion of the wall and not have to pour a new concrete wall in front of it. We are still evaluating that as we go along. We may take Alternative #2 in one location and Alternative #3 in another. We are going to treat it as a single project, but we're not going to pick only one alternative and apply it blanketly across the wall. During the design process we'll identify areas, where we can try to maintain the historic character of the wall.

13. RESIDENT #10: How safe is the wall? Will it collapse? Is it an imminent danger?

FPA: We would not say that there is imminent danger. We performed an existing condition inspection and identified some areas of concern that we brought to the County's attention – loose stones, bulging, clogged weep holes, and seepage issues. In the meantime, there probably





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will be a plan, hopefully, implemented by the County to mitigate those issues. The existing conditions report was submitted to the County and is under review.

14. RESIDENT #9: Now that we're doing this once-in-a-hundred-year project, there ought to be some concern for on top of the wall and maintaining some public access to where this parapet is going to be. The Yardley building is probably going to get developed and everything else to that staircase that goes down and around 6th Street – everything up to there has a beautiful Manhattan view and some consideration should be made to provide public access.

STOKES: Those comments and all the ones made earlier are so important. We want to have a written document of all of your comments, so if you can put them on the website for us we can take them back with us, chew it up, and at the next public meeting discuss how we can work with these alternatives and public comments.

FPA: We just want to clarify, that if we identify, as part of this existing conditions evaluation, anything that needs to be addressed immediately it will be addressed immediately. This is not going to wait six years for us to fix something. The County Engineer has indicated, that if we find anything out there which needs correction, we will take action.



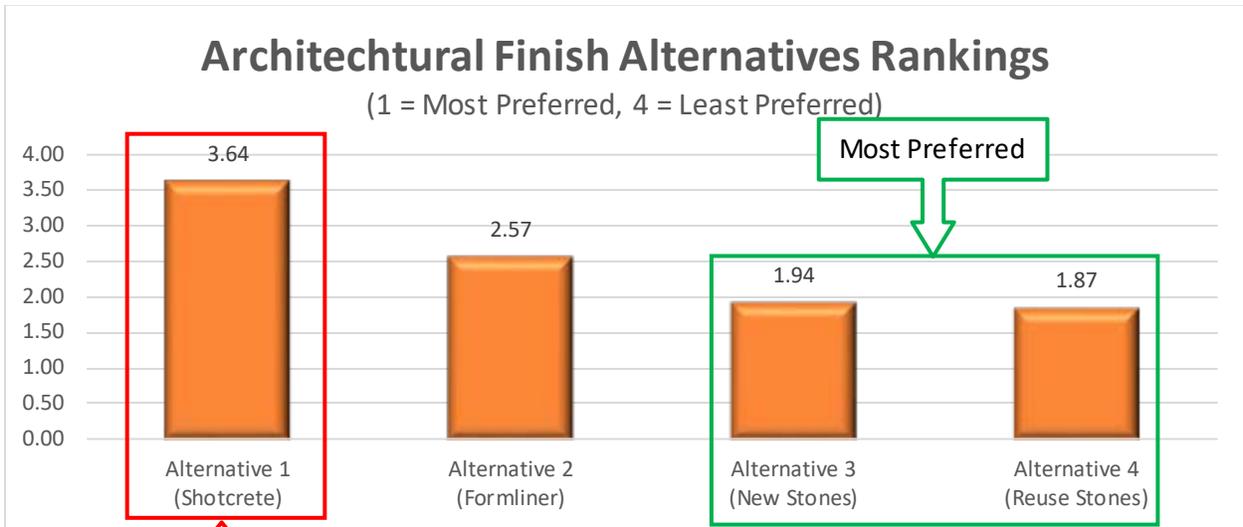
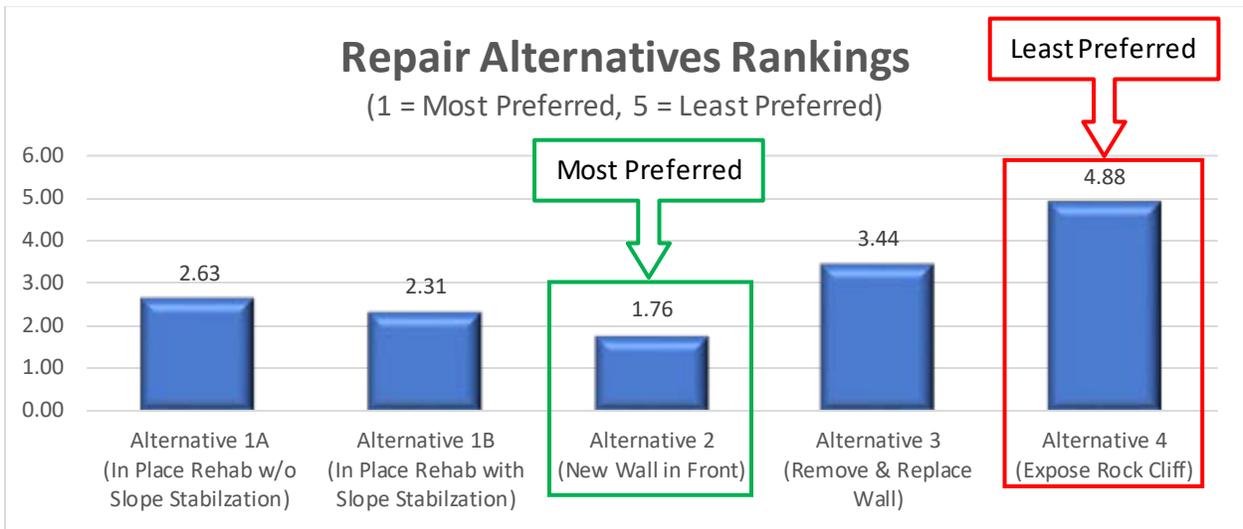


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## ALTERNATIVES RANKING SURVEY

At the end of the meeting, Nicole Pace-Addeo, Community Involvement Facilitator, asked the residents to rank the five Repair Alternatives and four Architectural Finish Alternative from most preferred to least preferred. Meeting attendees were provided with color coded stickers, which were to be placed on the information boards. The rating scale for the Repair Alternatives was 1 (Most Preferred) to 5 (Least Preferred). The rating scale for the Architectural Finish Alternatives was 1 (Most Preferred) to 4 (Least Preferred). Results are presented in the charts below. Photos of the information boards with survey results are shown on the following pages.



Least Preferred





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The following are photographs of the Repair Alternative Information Boards with the color-coded stickers placed by the Public attendees:

**Repair Alternative #1A**  
In Place Rehabilitation Without Slope Stabilization

**BENEFITS:**

- Eliminates need for wall demolition.
- Significantly lower cost than other repair alternatives.
- Can be developed in a manner that meets Secretary of Interior Standards. Assumed to be most desirable to State Historic Preservation Office (SHPO).

**DRAWBACKS:**

- Does not improve mismatched appearance of the previous various wall repairs.
- Does not enable installation of new drainage enhanced system behind wall. New weepholes will be provided but they may get clogged over time and will require regular

**VOTE HERE**

**NJTPA** NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY  
**FPA** FRENCH & PARBELLO

**Repair Alternative #1B**  
In Place Rehabilitation with Slope Stabilization

**BENEFITS:**

- Minimizes wall demolition.
- Reinforces the rock cliff behind the existing wall to prevent fractures.
- Enables installation of new drainage system behind wall.

**DRAWBACKS:**

- Modifies existing appearance of wall.
- Requires significant rock excavation to provide enough soil-back for buttresses to avoid encroaching on roadway.

**VOTE HERE**

**NJTPA** NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY  
**FPA** FRENCH & PARBELLO

**Repair Alternative #2**  
Construct New Retaining Wall in Front of Existing Wall

**BENEFITS:**

- Eliminates need for wall demolition & need for temporary retaining system.
- No impact to existing structures above the wall. Structures built on retained soil (parking lots, swimming pool, retaining walls etc.) can remain (if desired).

**DRAWBACKS:**

- Requires roadway realignment and shift (to the east), to provide additional space for new wall.
- Does not maintain existing historic appearance of the walls.
- Requires replacement of some of the existing retaining walls on the east side of Manhattan Avenue.

**VOTE HERE**

**NJTPA** NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY  
**FPA** FRENCH & PARBELLO

Most Preferred

**Repair Alternative #3**  
Remove & Replace Existing Retaining Wall

**BENEFITS:**

- Maintains existing roadway alignment.
- Eliminates all hidden risks associated with the existing wall.
- Could reuse existing stones to maintain existing appearance.

**DRAWBACKS:**

- Will impact existing structures above the wall that were built on retained soil (parking lots, swimming pool, retaining walls etc.).

**VOTE HERE**

**NJTPA** NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY  
**FPA** FRENCH & PARBELLO

**Repair Alternative #4**  
Remove the Existing Retaining Wall

**BENEFITS:**

- Eliminates the long term need for maintenance of the retaining wall.

**DRAWBACKS:**

- Impacts aesthetic appearance.
- Unknown profile of rock face behind wall.
- Risk of encountering unknown conditions once demolition work begins. May require additional work to stabilize exposed rock face.

**VOTE HERE**

**NJTPA** NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY  
**FPA** FRENCH & PARBELLO

Least Preferred

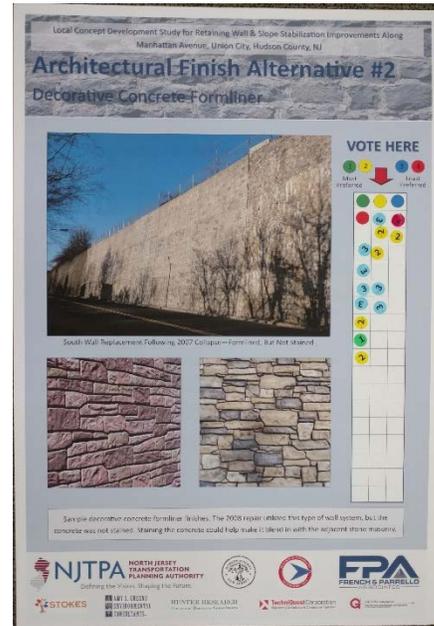
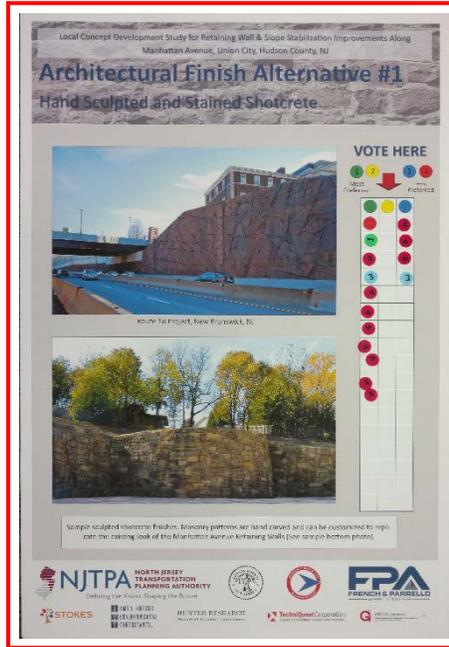




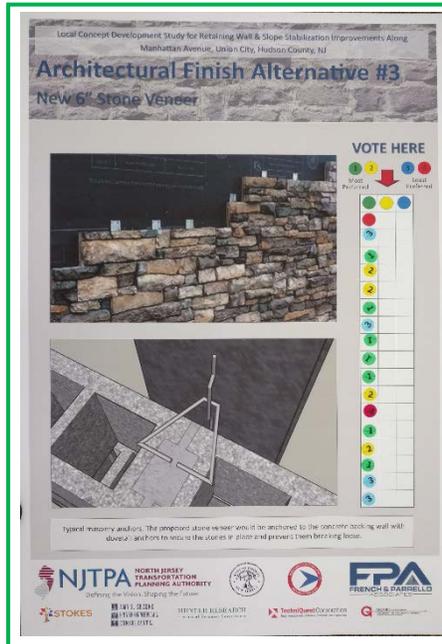
# Local Concept Development Study for Retaining Wall & Slope Stabilization Improvements along Manhattan Avenue, Union City, Hudson County, New Jersey



The following are photographs of the Architectural Finish Alternative Information Boards with the color-coded stickers placed by the Public Attendees:



**Least Preferred**



**Most Preferred**

