

Engineering Services for Island Partnership (MVC, Island Towns, and VTA)

Executive Summary

The State provided \$100,000 in funding for an island wide engineering professional to complete transportation projects for the island towns. The Martha's Vineyard Commission (MVC) contracted with Howard Stein Hudson (HSH) to provide Transportation Engineering services across the six island towns of Martha's Vineyard in August 2018. The towns of Martha's Vineyard are Oak Bluffs, Tisbury, Edgartown, West Tisbury, Chilmark and Aquinnah. Some projects also involved the Vineyard Transit Authority (VTA). This pilot term spawned from an expressed desire of Town Administrators, Department of Public Works Directors, and Highway Superintendents for additional technical capacity for capital transportation improvement projects. Thanks to Community Compact project funding and oversight of tasks assigned to HSH by MVC staff, this grant award has delivered a range of deliverables to the towns and, we believe, notable benefit.

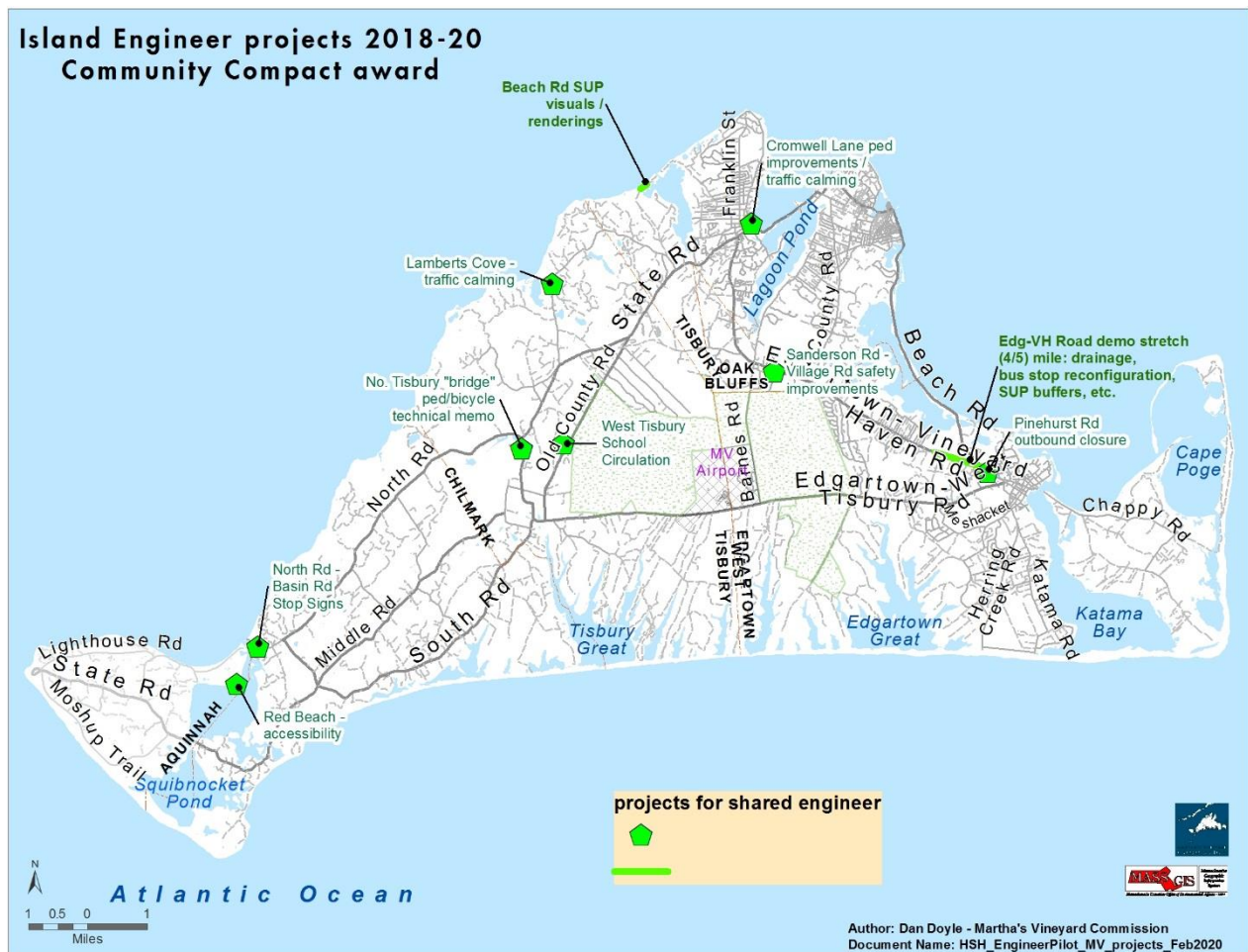
Project leads from the respective entities - HSH and MVC - worked closely together to compile work assignments and generate deliverables in an efficient and timely manner. Staff leads were Keri Pyke and Dan Doyle, respectively. Keri is a Professional Engineer, and Profession Traffic Operations Engineer as certified by the Institute of Transportation Engineers. Dan is a Special Projects Planner and LEED Accredited Professional.

A total of ten projects were assigned to HSH, following a concerted effort between MVC and town staff to identify projects where clear objectives could be achieved. For these projects, deliverables came in all forms. They ranged from formal design plans / cost estimates and book jobs to concept schematics and technical memos.

In sum, the Island Partnership afforded the towns with a great deal of flexibility for professional services at a reduced, negotiated rate by the MVC with HSH. MVC staff committed to synthesize input from different town stakeholders and compile both the goals and background materials in an accessible manner. The primary purpose of this was to give the project at hand a head start, allowing HSH to hit the ground running – rather than spend time tracking down key documents, determining regulatory constraints, and probing areas of uncertainty.

Only projects with clear goals were passed onto the engineer. A couple proposals were reviewed by MVC staff and failed to meet the threshold noted above. Admittedly, there were instances where HSH's hours were spent trying to better understand murky elements or directives, but these were oddities. In turn, the towns have a lot to show for the services provided through this regional arrangement.

Please see the next page for Tasks assigned to HSH during the pilot term.



Task 1. Beach Road Sketchup, Tisbury

This assignment centered around trying to better document the projected conditions of a proposed Shared Use Path, a State/federal funded project on Beach Road in Tisbury. The road extends along a barrier beach with extensive working waterfront infrastructure, often immediately abutting the existing Right of Way. Documenting and illustrating a design that was complex had really not been accomplished. MassDOT was troubled by lingering local dissent toward the project and a final public meeting was scheduled by the MVC to help illuminate the design elements and dispel fallacies that had begun to mislead some members of the community.

HSH generated graphics to augment this effort and these visuals proved a valuable part of the presentation. MVC does not have this skill set, in house, and renderings were critical in helping the community visualize how the new infrastructure would not only fit within an extremely constrained corridor, but also afford the opportunity to shift utilities and improve the overall aesthetic of such a well tread, island gateway. The project is slated to go out to bid in 2020.

Task 2. Cromwell Lane Design, Tisbury

There is a great deal of multi-modal traffic fanning out from the Vineyard Haven harbor, most notably at the Steamship Authority Terminal and town-owned parking lot directly across the street. The parking area has a short connector span running down from Main Street, which is both a one-way thorough fare for vehicles and a heavily-used pedestrian and cyclist route to catch ferries, grocery shop, and stroll Main Street.

Despite such intense use, the connector span comprising Cromwell Lane did nothing to ensure coherent circulation by the different modes of users. The Town identified this as a priority area through their Complete Streets commitment, but needed designs to get this project shovel-ready. The Island Partnership arrangement gave the towns access to engineering services that produced designs and cost-estimates ready for bid. The designs achieved a number of critical things: preserving a historic tree, improving signage, and establishing a sidewalk for pedestrians, thus ensuring safe passage in a high-intensity use zone. The project is presently out for bid.

Task 3. Edgartown - Vineyard Haven Road, Edgartown

Edgartown-VH Road suffers from a legacy of poorly placed drainage infrastructure. Rather than pursue a previous proposal to limit improvements to stormwater drains, the Town opted to reimagine the entire 66' ROW. This pivot allows for a widened Shared Use Path, established tree plantings along a widened buffer to prevent cars from pulling onto the SUP, and more defined space for VTA passengers at bus stops along the SUP. The Town committed additional funding to survey the area, enabling HSH to produce 25% designs. These were presented to the Planning Board on November 12, 2019.

Turnover at the Highway Superintendent, Town Administrator and Planning Board since the Task was identified has amounted to a hold on the project as new leadership has chosen not to pursue additional designs for the broadened scope at this time. Though this stretch of project would qualify for TIP funding, the price tag of comprehensive improvements for the entirety of the road led town leaders to question the prudence of reconstructing such a limited stretch of the pavement. Should the Town revisit the 25% designs in the future, it will have a plan that both beautifies this gateway into Town and makes the corridor a more functional thoroughfare.

Task 4. Pedestrian / Bicycle Improvements - North Tisbury Bridge, West Tisbury

The Town has long identified this bridge on State Road as a treacherous area for both pedestrians, cyclists and motorists. The travel lanes narrow to 10' in either direction as the bridge traverses Mill Brook. Following site visits and background materials, the engineer explored the prospects of two stand-alone spans parallel to the existing bridge. MassDOT made it clear that any attempt to append ped/bike accommodations onto the existing structure would trigger a full bridge reconstruction, which the Town feared would change the rural character of that bridge.

The technical memo produced by HSH outlined the extensive challenges for this project, from wetlands and permitting to significant financial cost and a need for easements. HSH's report discussed the "path of least resistance" should the Town opt to prioritize one side over another, while clearly articulating the impediments for either side of the bridge. The Town Administrator presented the technical memo to the town's Board of Selectmen and they have provided direction to use the findings to pursue the new infrastructure outlined in the memo.

Task 5. School Circulation Plan, West Tisbury

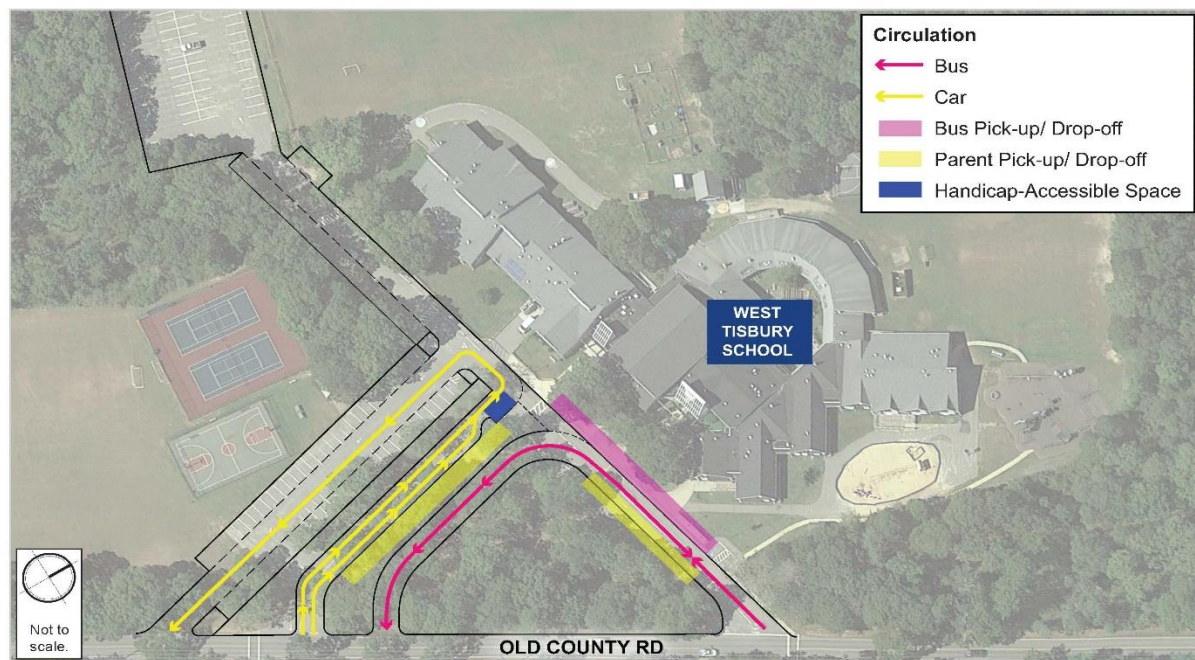
The Superintendent of Schools contacted the MV Commission for assistance in creating concepts to improve all forms of circulation in front of the West Tisbury School, which represents the K-5 school for West Tisbury and the 6-8 school for the up island towns – in addition to a pre-school. The Up Island School Committee was averse to the multitude of conflict points found under existing conditions. Following a site visit attended by HSH during after school pick-up, MVC, the School Principal, Complete Streets Committee members, and the Town Administrator, the engineer put together three short term alternatives. These were reviewed by MVC, the School Principal and HSH on a conference call where all three options were rendered inadequate.

HSH went back to the drawing board and then submitted a concept schematic that used a student-sketched, Administration-sanctioned idea as a springboard. It was developed and modified in select areas. The School Committee expressed support for the revised plan in that it completely separates pedestrians approaching the school and vehicles dropping off students. This concept schematic was modified to meet additional parameters and HSH provided cost estimates for the project along with a proposal to phase the construction. The School Committee will now see if the budget allows for the additional survey costs needed before the project can be designed. Please see Appendix E for final memo that includes concept schematics, next steps and cost estimate.

TECHNICAL MEMORANDUM
West Tisbury School Circulation
October 2019



Figure 3. *West Tisbury School, Proposed Circulation*



HOWARD STEIN HUDSON

Engineers + Planners

Task 6. Basin Road / North Road, Chilmark

The Chilmark Town Administrator identified a key intersection in the fishing village of Menemsha that needed additional signage to improve circulation. A site visit was swiftly arranged where HSH staff met with MVC, the town's Highway Superintendent, and Town Administrator to identify key sightline areas that needed attention before proposed signage could be leveraged. Final design plans, cost estimates, and a final memo were fast-tracked, allowing the Town to get the new infrastructure procured and installed before Memorial Day. Feedback from the Town has been very positive, noting more predictable driving behavior at the 3-legged intersection. Please see Appendix F for Chilmark deliverables.

Task 7. Lambert's Cove Road Speed Signs, West Tisbury

Lambert's Cove Road near its beach parking lot is a harrowing stretch of travel for pedestrians who use the roadside as overflow parking during summer months. Travel lanes wind along this scenic road where tree stands and stone walls flank the roadway. HSH was enlisted by MVC and the Town's Complete Streets Committee to site two flashing speed signs with driver feedback speed on both sides of the road approaching the beach parking lot. Siting was constrained by embankments, driveways, sightlines, and canopy cover given the preference to use solar-powered signs.

After site visits by MVC staff, the Police Chief, Complete Streets Committee members, and the engineer, along with multiple iterations of proposed sitings, the Town agreed on locations identified by HSH where solar exposure will be adequate. HSH was also able to provide the Town with discounted pricing from a vendor distributing desired equipment. The signs have been secured and will be installed this Spring, in time for the 2020 peak tourist season. Please see Appendix G for West Tisbury Lambert Cove Road deliverables.

Task 8. MVRHS Safety Improvements, Oak Bluffs

The Regional High School on Martha's Vineyard is located within a pocket of Oak Bluffs where development continues to place significant demands on the roadway network in the area. The Regional High School serves as a community hub during all hours of the day and three major community institutions are directly across the street: MV Community Services, the YMCA and the Ice Arena. In turn, pedestrians routinely cross the street from one site to another, skirting a steady flow of traffic that ratchets up during the early AM and mid-afternoon.

HSH was tasked by the Town and MVC to propose concepts that would improve safety at the MVRHS – Edgartown-Vineyard Haven Road intersection. Following a site visit with the Town's Highway Superintendent, Planning Board Chair, Fire Chief, School Facilities Director, Superintendent's Office staff and MVC staff, a draft memo was submitted explaining a host of different recommendations to make the intersection safer through traffic calming and improved sightlines & signage. HSH arranged for a subsequent conference call to review the recommendations where input from the Police Department, High School Facilities Director, Planning Board Chair and Fire Chief was integrated into a final memo with pricing on both new signage and retrofits of existing signs.

The High School Facilities Director is considering the LED Stop Sign retrofit for a future budget cycle. Please refer to Appendix H for deliverables.

Task 9. Red Beach Access Improvements, Aquinnah

The Aquinnah Planning Board and Town Administrator identified Red Beach, a town-owned beachfront on Menemsha Pond where access was precarious from the parking lot to the water's edge. The Town requested recommendations that would improve access without triggering Conservation Commission review.

HSH staff customized their recommendations for a small town in identifying a practical way to make the floating wheelchair both secure and accessible given the town's limited budget precludes a kiosk attendant. The submitted memo also sited the proposed, weather-proof roll up mat and provided multiple types to choose from. Placement accounted for grading, existing vegetation and a proposed shift of a non-compliant attempt at an ADA railing, extending from the parking lot onto the beach. Recommendations included ways to bring the railing into compliance and companion materials were submitted which calculated estimated additional volume of cubic sand needed to both mitigate existing trenching and provide support beneath the proposed mat.

The Town has secured funding to procure the floating wheelchair and roll up mat, while the Department of Public Works has agreed to take on annual installation and dismantling of the mat for storage. Please see Appendix I for deliverables.

Task 10. Pinehurst Road One Way direction concept, Edgartown

The largest employer in town, Stop and Shop, was approved to shift one of their driveways to align with Pinehurst Road. Construction to that effect will begin this year and the Planning Board and Highway Superintendent want to model the impacts of limiting the existing two-way direction of Pinehurst Road to single direction only for roughly two blocks. In turn, vehicles would be prevented from funneling onto Upper Main Street at that intersection. The hope is that congestion along Upper Main Street can be somewhat mitigated.

HSH is leveraging existing traffic count data that was collected as part of Stop and Shop's TIAS when their proposed expansion was reviewed in 2017. This data will inform modeling that will explain the anticipated implications to the overall volume of vehicles traveling along Upper Main Street if the closure is implemented. The final memo and model will also provide insights to ripple effects to other key intersections in the area. These deliverables will be completed by March 2020. HSH is particularly well positioned to take this task on given they were the 3rd party consultant chosen by MVC to peer review Stop and Shop's TIAS; they are very familiar with existing conditions in this area.

Lessons Learned*Efficiencies*

The pilot project exhibited what can be accomplished when there is a single staff member dedicated to managing each task and ensuring the engineer's time is reserved for those parts of a project where that technical expertise is truly needed. It is akin to a non-profit's arrangement with their attorney on retainer. Discretion needs to be exercised lest attorney fees accrue unabated. Billing by the engineer reflected this

attempt at cost control; it was clear that HSH staff time was allocated with a recognition that this arrangement will not be renewed without demonstrating clear value for the services.

On paper, the Island Engineering Partnership may have appeared as simply another layer of bureaucracy. In practice, MVC ensured there were clear goals and objectives articulated for each assignment and requested town staff / project team members channel their communication through the MVC Project Lead. More often than not, MVC staff was able to address the inquiry without additional correspondence with HSH staff. For those times where it couldn't, efforts were made to provide companion materials with the outreach so that appropriate context was readily available.

To the engineer's credit, they were agreeable to a key request made at the very beginning of the project to limit the hours of high-profile staff who command the highest hourly rates. Junior-level planners and even interns were leveraged for sub-tasks where their services were adequate, while senior staff and engineers reviewed deliverables to ensure high-quality work was delivered to the Towns and MVC.

Surveying

MVC underestimated how integral surveys are in determining ultimate funding opportunities for projects where construction remains the final step. In generating design plans, HSH first needed surveys of the project area at hand. Sometimes these were readily available, while other times additional funding needed to be committed by the Town (MVC also committed a small portion of survey costs in Edgartown).

From the very beginning, the most glaring need for engineering services was borne from potential Transportation Improvement Program (TIP) projects that needed design work reflecting local, island context and character. Only then could these projects become eligible for construction funds through the TIP program.

Without surveys completed to MassDOT survey guideline standards, HSH was unable to generate designs that would make a project TIP-eligible. Keri Pyke, the Project Lead, was out for an extended stretch on medical leave. A colleague involved with the Edgartown project did not specify its scope of survey work must meet MassDOT standards. Furthermore, the Highway Superintendent for Edgartown vacated his position during this time, amounting to confusion about the preliminary survey work which VLS was trying to scaffold upon. Ultimately, the survey work provided fell short of what HSH needed and additional survey costs were incurred that may have otherwise been avoided. This prompted several hours of focus for both MVC staff and HSH staff, along with repeated requests for VLS to provide a more thorough survey.

Much as the forces described above were a perfect storm for confusion, they also proved a valuable learning experience for all parties – and revealed that some on-island surveyor firms lack the AutoCAD Civil 3D essential for producing MassDOT caliber surveys; the island-based industry is geared toward property surveying, not roadways. This simply underscores the need for increased collaboration across the towns given the high costs incurred by any single town when off island entities are hired for stand-alone projects. There are real opportunities for cost-savings when towns coordinate these travel costs. The Island Partnership for Engineering Services demonstrated just that. Trips made from Boston to the island by the engineer were limited, and always strategic; no visit was ever made without first arranging for additional site visits and meetings, which gave multiple towns access to the engineer on the same trip.

Looking Ahead – Next Steps

Howard Stein Hudson has indicated clear interest to extend the contract, moving forward. MVC has met with key Town staff in the recent months to assess their impression of the pilot arrangement and gauge their interest for securing local funding, moving forward. We will next put together a formal proposal accounting for the range of valuations across the towns; this framework will give towns continued access to these engineering services at the MVC negotiated rates, should they agree to commit funding.

We feel very fortunate to have been entrusted with the funds needed to pilot this innovative arrangement and believe it's been leveraged with island-wide benefit. Thank you, and we hope this model has potential for other rural communities where technical capacity is needed.