

# ROADSTER



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*"Paving the Way"*

## NWA Introduces New Drainage Guidelines for Building and Sub-division Proposals



On Tuesday, June 9, 2015, The Ministry of Transport, Works and Housing (MTW&H)/National Works Agency (NWA), in collaboration with the Office of Disaster Preparedness and Emergency Management (ODPEM) and the Water Resources Authority (WRA), launched New Drainage Guidelines for Building and Sub-division Proposals. The event took place at the Jamaica Pegasus Hotel. Here seated at the head table are, beginning at centre: Dr The Hon. Omar Davies, M.P., Minister of Transport, Works and Housing. To his left are: Hon. Noel Arscott, M.P., Minister of Local Government; Mr. Richard Thompson, Deputy Director General, ODPEM; Mr. Everton. G. Hunter, C.E.O., NWA; and Mr Basil Fernandez, Managing Director, WRA. To the right of Minister Davies are: Hon. Dr Morais Guy, M.P., Minister without Portfolio with Responsibility for Housing in the MTW&H; Mrs Audrey Sewell, J.P., Permanent Secretary in the MTW&H; Mr Hiromoto Oyama, Charge d'Affaires, the Embassy of Japan in Jamaica; and Mr Kenji Tobita, Resident Representative, Japan International Cooperation Agency (JICA). Standing at the podium is: Mr Stephen A. Shaw, Communication and Customer Services Manager, NWA.

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# State Minister for Works, Richard Azan on tour



State Minister, Ministry of Transport, Works and Housing (MTWH), Hon. Richard Azan in conversation with kids who attend the Old Harbour Seventh Day Adventist Church Basic School



The Cutting of ribbon at the opening of the Bigwoods Culvert South West St Elizabeth....From Right to left,...Councillor Martin, Richard Parchment MP, Hugh Buchanan MP, Minister Azan and Councillor Jeremy Palmer



Minister of Tourism and Entertainment Dr. the Hon. Wykeham McNeill, Joylan Silvera Member of Parliament Western St. Mary and State Minister MTWH, Hon. Richard Azan listen intently as MEL Tennant explains how he released 600 baby turtles from nests along the Gibraltar Beach in St. Mary to the sea



Minister Azan, Rudyard Spencer MP, Personnel of the parish council, NWA and the JEEP Secretariat cutting the ribbon for the Mackie road, Palmers Cross Clarendon



Minister Azan addresses residents of Old Harbour at the official opening ceremony for Lafa Street rehabilitated during JEEP Phase iv



Minister Azan at the Portmore Municipal Council contract signing ceremony for construction of the new Hellshire Bridge



## *NWA Introduces New Drainage Guidelines Document for Building and Sub-Division Proposals*

A very important goal of the National Works Agency is to ensure the development of safe and reliable infrastructure. These infrastructures are created and developed not only by entities of Government, but also to a large extent, by private entities engaged in building and subdivision developments. While the Government welcomes and encourages developments by private bodies, development designs must meet relevant requirements and optimal specifications.

The need to increase the delivery of housing units persists. In view of this situation, the need to balance development with Disaster Risk Management has become more necessary. The preparation of hydraulic reports to inform the development of subdivisions nationally is an important tool used to mainstream Disaster Risk Reduction in the development planning process.

However, infrastructure development which has tried to meet the demands of the population has been fretted with many counterproductive issues. This is especially with regards to drainage construction and improvement. It is caused in part, by engineering designs being done without a proper understanding on the part of the designers, of the relationship between rainfall intensity and the level of risks involved in undertaking developments. We find that presently, development application designs have been inconsistent in the calculations applied; utilized outdated meteorological data or have not adequately accounted for all factors influencing storm water runoff downstream or upstream of the proposed development.

The New Guidelines document which was introduced on June 9, 2015 therefore, seeks to decrease the number of applications that we must refuse or return for further information, and ensure that designs are optimal. These new guidelines:

- Outline the minimum information to be included in the preparation of these drainage reports
- Further the mainstreaming of Disaster Risk



Main Presenter, Howard Prendergast, NWA Senior Civil Engineer, addressing participants at the Stakeholders Workshop held on Tuesday, May 5, 2015

Reduction (DRR) into the project planning phase in order to reduce future impacts and economic losses from disasters and

- Allows for more accurate designs and the ease of application evaluation and approval.

The Ministry of Transport Works and Housing and the National Works Agency, together with collaborating partners have been integral in the development of the new Guidelines document. Stakeholders such as the Office of Disaster Preparedness and Emergency Management, the Water Resources Authority; the National Environment and Planning Agency; the Local Government Ministry, the Jamaica Institution of Engineers and the Mines and Geology Department have played critical roles in the development of this document.

The New Drainage Guidelines for Development is not only a guide for developers or the engineers who prepare hydrologic and hydraulic reports; it is also a guide for our government entities who are concerned with the approval of these applications.



## *Dawkins Pen to Mineral Heights Main Road in Clarendon to undergo Major Rehabilitation*



The new Dawkins Pen Bridge Clarendon

After years of being in a state of disrepair the Mineral Heights to Dawkins Pen main road is to undergo major repairs. These works are to be carried out under the Major Infrastructure Development Programme (MIDP). This roadway is the main corridor connecting the Highway 2000 Toll Road to May Pen, Hayes, Lionel Town, Alley and Rocky Point. It has not seen any significant maintenance since construction except for a micro surfacing intervention about four years ago to seal the heavily cracked surface and prevent water intrusion.

The route is about 13 kilometers in length and carries an average of 11, 834 vehicles per day. A large percentage of these are heavy duty vehicles that travel to and fro from the Jamalco Alumina Refinery, Moneymusk Sugar Factory and aggregate quarries. Communities such as Rocky Point and Portland Cottage, buses transporting students to schools also utilize this roadway on a daily basis.

The scope of work includes improvement to driving lanes, limited base replacement, the widening of curves and the re-laying and widening of culverts. The project is expected to commence in July 2015 and scheduled for completion in six months.

Speaking at a packed town meeting at JAMALCO recently, State Minister for Transport, Works and Housing, Hon. Richard Azan told the audience that, "it is not a PNP or JLP road. He emphasized that it is a road that will lead to the development of people's lives and politics should be taken out of its development". Member of Parliament for North Central Clarendon, Mr. Rudyard Spencer in his address to the gathering, praised Mr. Azan for his advocacy in getting the road to be rehabilitated. His worship the Mayor of May Pen, Councillor Scean Barnswell encouraged the gathering, "to pay their property taxes to get more road repairs". The project is expected to cost \$260million.



**CENTRAL**

## *The Rehabilitation of the New Holland Road, St Elizabeth*

The National Works Agency has just concluded patching of the New Holland to Redgate in the vicinity of New Holland Square in St Elizabeth. For years this location has been affected by numerous large potholes and blocked drains. This road section is heavily traversed by tourists and visitors to the renowned and popular YS Falls in South Western St Elizabeth.

The rehabilitation of this tourism product was funded by the Tourism Enhancement Fund (TEF) at a sum of three million dollars and was completed under the National Works Agency's Force Account programme. Blocked drains were cleared and 1500m<sup>2</sup> of roadway patched on this once severely damaged section of the 'Holland Bamboo Avenue'. This project began on May 12, 2015 and was completed on June 5, 2015.

Miss Sandra White, Councilor of the Brompton Division expressed her gratitude with the quality of work that was done. She testified that the residents were extremely happy and satisfied with the initiative. She reminded the team of the importance of the corridor to the social and economic lives of the community with at least thirty tour buses and numerous taxis carry passengers to the attraction daily. Miss White mentioned that this roadway forms a vital linkage to Maggotty, Ipswich, Springfield, Ginger Hill, White Hill, Pigsaw, Cambridge and even Montego Bay.

Mr. Anthony Freckleton, Chairman of the South Resort Board is proud that the Board was able to facilitate the funding of the rehabilitation of this corridor. He implores motorists to deter from using the road as a racetrack.



Preparation of road way for patching



Hot mix patching in progress



Clearing of a blocked drain



Sandra White, Councilor of the Brompton Division



## *The Rehabilitation of the Soursop Turn to Chapleton Road in Clarendon*

The rehabilitation of the Soursop Turn to Chapleton corridor was approximately twenty percent complete in mid-June 2015. The objective of the Project is to improve one section of the access road linking the central areas of the Island to the North Coast via May Pen to Trout Hall through Cave Valley to Discovery Bay. The improvement works will enable a reduction in travel time, an improvement in road safety and will cause an increase in economic activity along the newly aligned roadway.



Rock excavation in progress

The scope of works emphasises the widening of the existing roadway to accommodate 2.4m shoulders, realignment of the existing roadway to improve line of sight by taking out some of the corners, improvement to the existing drainage system with the installation of new surface and subsurface drains. The thickness of the pavement was achieved by increasing the thickness of the asphalt and road surface features.



Excavation along the corridor

The project which was started on September 8, 2014 is expected to be completed in the next 18 months. The 10.5 km of roadway has a projected cost of J\$1.28BILLION is a joint venture contracted to Asphaltic Concrete and General Paving. The project is funded by the OPEC Fund for International Development and the Government of Jamaica.

Rock excavation is on-going in the Sour Sop Turn area. Filling and compaction of base and sub-base areas took place near the petrol station in Turners along with cutting of large trees. Drilling works are also being done in preparation for impending blasting.



Site visit of State Minister Azan and NWA Officials



## *The Rehabilitation of Kendal Main Road in Manchester*

Residents of Kendal in Central Manchester who have for years seen the main road in a deplorable condition are now witnessing road rehabilitation along the Kendal to Clarks Town corridor. The Kendal main road forms a critical part of the route from Christiana to Mandeville. The National Works Agency has contracted the 3.4 km to S & G Surfacing Material Limited at a cost of \$31 Million.

The scope of works for the Project includes site clearance, construction of kerb and channel, cleaning of side drains, cleaning outlets, pothole patching and repairs as well as applying asphaltic overlay. The official start date was April 20, 2015 but this was deferred due to work along the corridor which was scheduled for completion by the National Water Commission. The works were re-started on May 27, 2015 and it is near completion.

The Kendal road is in a unique situation. There are three Members of Parliament and three Councilors sharing responsibility for the road network in North East, North West and Central Manchester. At a Community Meeting, the Minister of State in the Ministry of Transport and Works, Richard Azan, reinforced the need for safety. Mikael Philips Member of Parliament said that the contractor will be donating four signs for the rehabilitated road to encourage persons to use it carefully. Principal of the Kendal Primary School, Maxine Headley remarked that safety of students is a concern and she is lobbying for a traffic warden to be stationed close to the school and more attention by the Police to minimise speeding along the improved roadway.



Hotmix Patching in Progress



Mikael Philips MP addressing the Town Meeting



Preparatory work done



**NORTH EAST REGION**

## *St. Mary's Flood Damage Issues Addressed through Multimillion Dollar Restoration Projects*

Over the past several years, rainfall has proven to be a ghastly and horrendous adversary to the parish of St. Mary. This is quite ironic because rainfall represents, or should represent, a source of life and replenishment, and it is, but for many, across the waterlogged parish, it also represents damage and loss. The year 2014 was a particularly trying year in the parish, as much damage occurred, in St. Mary, as a result of consistent rainfall. This brought to the fore the expressed need for drainage solutions, flood damage repairs and flood mitigation techniques across the parish.

It makes perfect sense, therefore, that since the beginning of 2015, St. Mary has been the site of multiple multimillion dollar projects which target breakaways, drainage and river training. The affected locations include Fort George to Camberwell, Palmetto Grove to Pear Tree Grove, Richmond to Kendal, Frontier Heights to Port Maria, Free Hill to Fontabelle, Oracabessa to Union Hill within the community of Ramble and Hamilton Mountain.

### **FRONTIER HEIGHTS**

Following the December 2014 rains, there remained a massive breakaway of the Frontier Heights roadway. A huge gabion retaining wall and toe wall were constructed at the location and the roadway re-instated. The project was undertaken at a cost of over \$27 million and is substantially completed.

### **FORT GEORGE TO CAMBERWELL**

This location was virtually crippled by a severely scoured roadway, accentuated with numerous breakaways. The situation was further compounded by intermittent rainfall over several months. This created a level of unease for residents, as there is a school at Camberwell and after seeing the adjoining roadway, Fort George to Cumsee, receive some much needed attention in 2014, they felt like they were not a priority. But as an old adage says "patient man ride donkey" soon the residents of the communities along this thoroughfare will be riding with more ease, regardless of their mode of transportation.

Work began along the Fort George to Cumsee roadway in mid-April and will see the temporary restoration of the roadway using river shingle and the construction of retaining walls and drainage improvement works. The project cost is \$11.9 million.



Frontier Heights - Framework being put in place for the pouring of concrete deck.



Toe wall at Frontier Heights, St. Mary



Toe wall at Frontier Heights, after being backfilled





Concrete casting of the foundation of the Box Culvert completed, along Palmetto Grove to Pear Tree Grove roadway

### **PALMETTO GROVE TO PEAR TREE GROVE**

A box culvert is being constructed at Woodside, along the Palmetto Grove - Pear Tree Grove control section. The project which began on May 11th is funded by the Capital "A" budget, at a cost of \$9.2 million, and is aimed at addressing drainage issues as well as reinstating the roadway along with constructing of a new box culvert.

### **RICHMOND TO KENDAL**

This thoroughfare is characterized by several breakaways that may be attributed to a river which runs adjacent to the roadway, as well as scouring of the roadway in sections. As part of this project, a gabion wall and a rubble wall will be constructed, both complemented by rubble stone parapet walls and coping. Side drains, outlets, catch basins and a 600mm culvert will also be cleaned as well as some patching and pothole repair. The cost of the project is \$7.7 million.

### **FREE HILL TO FONTABELLE**

Along this control section two main projects are being undertaken, namely the reconstruction of the Tryall Pedestrian Bridge, River Training, Bridge Repair and Reinforcements at the Tryall Bridge over the Outram River.

The Tryall Pedestrian Bridge is being replaced at a cost of \$6.2 million. As such, the 'old' structure was demolished, the two abutments were replaced and a pre-stressed concrete slab placed atop the abutments and will form the pier of the structure. The works will be complemented by gabion support along the embankment of the river.

River Training works began in June, along the banks of the Outram River at the Tryall Bridge. The works which form part of a larger flood damage restoration project will also see

some amount of desilting being carried out within the river bed and repairs being done to underpin the abutments of the bridge as these were undermined by flood waters. The works will be further complemented by gabion supports to include a Reno mattress. The overall cost of this project is approximately \$20 million.

Both the Oracabessa to Union Hill (Ramble) and the Hamilton Mountain (Hamilton to Free Town) projects are in their preliminary stages, with the former scheduled to get underway in coming weeks. They are both Flood Damage Restoration projects and will both entail the construction of gabion retaining structures and the reinstatement of the roadway.



Gabion retaining wall being constructed along the Fort George to Camberwell control section



## *Multimillion Dollar Wall and Drainage Works Expected to Remedy Years of Unease in West Hill, Portland*

For several years, there existed a breakaway in the community of West Hill, located along the Breastworks to Windsor main road, just outside Port Antonio. The area, which houses a major National Water Commission (NWC) pipeline, had become increasingly unstable over the years. This caused some amount of unease among residents, and other road users, who feared that, if the section was not remedied, the roadway would have broken away completely.

After what may have seemed like "too long to happen", in the words of one resident, it is now happening, as works began in May to fix this breakaway issue once and for all. The "remedy" which is being funded by the Capital budget, at a cost of over \$19 million, will see the construction of a massive gabion retaining structure which will be complemented by a French drain.



Gabion wall being constructed at West Hill, along the Breastworks to Windsor roadway in Portland

***"Keeping Drains  
and Gullies  
Debris-Free  
May save the life of  
you and me"***





**WESTERN**

## *Multi Million Dollar Mitigation Programme for Western Parishes*

The 2015 Atlantic hurricane season has been forecasted to be a below normal one based on the level of storm activity which has been predicted, with no more than eleven named storms, with from three to six of these having the possibility of becoming hurricanes. The forecast further suggests, that no more than two of these named storms may become Category Three Hurricanes.

The NWA has not taken these forecasts lightly, since the low numbers do not necessarily equate to a less destructive season. The Agency is now far advanced in its efforts to clean critical drains and gullies across the western parishes of Westmoreland, St. James, Hanover and Trelawny.

These latest efforts of the NWA to have drains and gullies cleaned forms part of the Agency's mandate to provide an efficient flood control system. The programme which commenced in June is valued at approximately \$14 million. St James and Westmoreland can now boast a state of readiness with the completion of their drain cleaning projects. Drain cleaning activities continue in the parishes of Hanover and Trelawny.

Among the drains that have been completed are the North Gully and South Gully in St. James, those along the Anchovy and John's Hall roadways in St. James and the Pondside and Ramble drains in Hanover. The programme is expected to be completed by mid-July 2015.



The South Gully – A view of the South Gully following the latest mitigation Programme



The South Gully Silt Trap – St. James A view of the South Gully during the latest cleaning exercise



## *Multi-Million Dollar Road Improvement Projects Completed in St. James*

June 17, 2015 was a memorable day for residents of Farm Heights, Peace View and Phoenix Drive in St. James, as it marked the official opening of the roadways by State Minister for Transport and Housing, Hon Richard Azan. The roadways were recently rehabilitated by the National Works Agency (NWA) at a cost \$10 million under the Jamaica Emergency Employment Programme (JEEP).

These road improvement projects were well received by residents who had long bemoaned the deteriorating condition of these roadways.

The Roadster spoke with Lascelles Harvey, a resident of the Farm Heights community, who expressed his delight that the project was finally completed. "This road was like a river course whenever there was heavy rain. My vehicle would always get stuck in the large craters in the road, and trust me it was frustrating. It's a joy to see this new road especially to see where it was coming from" Mr. Harvey said.



State Minister for Transport Works and Housing, Hon Richard Azan cuts the ribbon to officially open the Farm Heights roadway in St. James. Joining in the occasion are members of the community as well as the Project Director for the JEEP Carolyn Gardner (third left), Councillor for the Montego Bay South East Division Knollis King (Fourth left), Deputy Mayor for Montego Bay, Michael Troupe, Project Manager NWA, Orville Reynolds, Deputy Superintendent St. James Parish council Saad Campbell and Director of Regional Implementation and Special Projects – NWA, Varden Downer.



State Minister for Transport Works and Housing, Hon Richard Azan cuts the ribbon to officially open the Peace View roadway in St. James. Joining in the occasion are, from left, Project Director for the JEEP Carolyn Gardner, Deputy Mayor of Montego Bay Michael Troupe, Member of Parliament for North West St. James Dr. Horace Chang, Councillor Martin Kellier (Welcome Hall Division), Councillor Stanley Harris (Montego Bay West) and Councillor Knollis King (Montego Bay South East).



State Minister for Transport Works and Housing, Hon Richard Azan cuts the ribbon to officially open the Phoenix Drive in St. James. Joining in the occasion are, from left, Deputy Superintendent St. James Parish Council Mr. Saad Campbell, JEEP Technical Coordinator Mr Lyndon Wilson, Project Director for the JEEP Carolyn Gardner, NWA Project Manager MR Orville Reynolds, Director of Regional Implementation and Special Projects Mr. Varden Downer, Councillor for the Welcome Hall Division Mr. Martin Kellier, Deputy Mayor of Montego Bay Michael Troupe.



This latest effort by the Government of Jamaica to improve community roadways across the parish brings to a total of 20 such road improvement projects completed since the start of the year.

Minister Azan added that the work in communities such as Farm Heights was not done as the citizens now had the role of protecting the investment, by ensuring that garbage is properly disposed of and does not find their way into drains and gullies. He highlighted that blocking the drains with domestic waste would reduce the efficiency of these drains resulting in damage to roadways.

In his address to the residents of Farm Heights, the State Minister also urged residents to take due care in using the recently rehabilitated roadway, as excessive speeds is leading to a high level of fatality across the nation.

**BIG UP TEAM NWA!!!**



**MAVERLEY PRIMARY & JUNIOR HIGH**  
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Vice Chairman: Mr. Yvonne Foster, J.P.  
Principal: Mrs. Dorothy Taylor  
Vice Principal: Ms. Dana Marie Sewell

May 14, 2015

Mr. E.G. Hunter  
Chief Executive Officer  
National Works Agency  
140 Maxfield Avenue  
Kingston 10

Dear Mr. Hunter,

**Re: Gratitude For Fixing Roads**

We write in response to our letter to you dated December 12, 2014 regarding Urgent Attention For Fixing Roadways Leading to Maverley Primary & Junior High School. Kindly accept our sincere gratitude for coming to our rescue in fixing these roads. This has certainly made a big difference in the way we commute.

Once again thank you.

Yours truly,

Dorothy Taylor (Mrs.)  
Principal

Cc: Mr. Derrick Smith - Member of Parliament  
Mr. Tan Telfer - Councillor



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May 22, 2015

Mr. Everton Hunter  
Chief Executive Officer  
National Works Agency  
140 Maxfield Avenue  
Kingston 10.

Dear Mr. Hunter:

The management and staff of the Victoria Jubilee Hospital would like to express our profound gratitude to you and your staff who worked tirelessly to assist in the uplifting of the aesthetics of this institution.

The road works donated by your kind office was well needed and will undoubtedly still be seen, years to come.

Thank you for your kind considerations as we continue to strive for a mutually beneficial association.

Sincerely yours,  
Kingston Public & Victoria Jubilee Hospitals

Jacqueline C. Ellis (Ms.)  
Deputy Chief Executive Officer

Board of Directors: Dr. Andrei Cooke, (Chairman); Ms. Maureen Golding (Regional Director); Dr. Heather Reid-Jones (Regional Technical Director); Mrs. Souleah Stevens (CEO, KPHV/JH); Dr. Nadelle Whyte (Senior Medical Officer, KPH); Miss Veronica Miller (Director of Legal Services, MCH); Mr. Hurley Taylor (MCH); Dr. Carol Archer (Deputy Chairman); Dr. Percival Bahado-Singh; Mrs. Hyacinth Inman; Mr. Dalton Patterson; Mr. Hopeton Morrison; Mr. Andrea George Manning; Councillor Audrey Smith Facey; Mr. Conrad Beckford; Dr. Michael P. La Morte



## *Multi-Million Dollar Road Improvement Project completed in Southern Trelawny*

"I am extremely happy," these were the sentiments expressed by Ulster Spring resident Ms. Hermine Hamilton in response to a multimillion dollar effort by the Government of Jamaica to restore a section of the Ulster Spring roadway in Southern Trelawny. Similar sentiments were expressed by other residents of Southern Trelawny who were similarly appreciative of the government's effort to rehabilitate the Ulster Spring, Dutch Hill, and Rock Spring roadways in the parish.

These roadways fall along corridor between Jackson Town and Albert Town and forms part of the South/North link between Christiana, Manchester and Falmouth Trelawny.

The roadways had been a cause for concern for several years, as persistent flood activity had resulted in some sections being severely eroded. Over time, the situation became worse, reducing some sections of the carriageway. However due to constraints, the National Works Agency was unable to tackle these issues earlier.

In February 2015, the NWA embarked on a programme of works to repair the Dutch Hill roadway. The Ulster Spring and Rock Spring projects commenced shortly after. These projects involved the excavation of the road surface, the construction of retaining walls, the improvement of drainage features in the area, and the reinstatement of the affected sections of the roadway.

Ms. Hamilton gave a stamp of approval for the Ulster Spring project, located mere metres from her home. "The project moved faster than I expected," she said. She added: "the road is now much safer for all road users, especially the small children who traverse the roadway to attend the nearby Ulster Spring Primary School." The projects were completed at a cost of approximately \$14.8 million.



Hermine Hamilton, Resident – Ulster Spring



The Ulster Spring roadway during construction



A view of a section of the retaining wall which was recently constructed along a section of the Ulster Spring main road



## The Palisadoes Mangrove Replanting Project

Mangroves located along shorelines are important for many reasons. Among them are protection of endangered species and protection of the shoreline. Mangroves also act as a nursery and are utilized as a renewal resource zone. Over two hundred different uses of mangroves and mangrove forests have been identified globally. Their location, interface between land and sea, the hardiness and the flexibility of these trees is the reason for their tremendous biodiversity, usefulness and productivity.

### SHORELINE PROTECTION

Mangroves protect the shorelines from erosion by stabilizing sediments with their tangled root system preventing these from reaching neighbouring coral reefs and sea grass ecosystems. Mangrove systems have also been used for the polishing stage of sewage treatment. This is being done in Greater Portmore. They also protect the shoreline from damaging storm and hurricane winds, floods, turbidity and wave motion. Mangroves help to maintain water quality and clarity by filtering pollutants and trapping sediments that originate from land areas. In locations or regions where these coastal fringe forests have been cleared problems of erosion, flooding and siltation have arisen. Sometimes there is loss of human life and property due to destructive storms along coastal regions where these have been cleared.

### MANGROVES ACT AS A NURSERY

Mangroves serve as a nursery area for fish, shrimp, crustaceans, birds, finfish, manatees, reptiles, mollusks and other animals. They serve as breeding nursery and feeding



Turbidity barriers are being put in place. These barriers act as silt traps and also control contaminants brought into the area. These barriers also control wave action and protect newly placed material from erosion.

ground for various species. Almost 75% of commercially caught fishes, parrotfish, snappers, jacks, doctor-fish as well as shellfish spend time in the mangroves ecosystems during some period of their life cycle, seeking shelter, food or using the mangroves location as a mating ground. They also serve as a critical component of the fishing industry. These habitats do not only provide an area rich in food supply but serves as a refuge from predators. Jamaica's fishing industry will suffer decline if fish do not have access to healthy mangrove habitats.

### MANGROVES PROTECT THREATENED AND ENDANGERED SPECIES

In addition to commercially important species such as fish, mangroves support and protect threatened and endangered species. These include sea turtles and crocodiles. These species use the mangrove systems during at least some portion of their life histories, while others reside there for entire life spans, feeding and nesting within the mangroves.

### MANGROVE – A RENEWABLE RESOURCE

In many parts of the world mangrove trees are used as a renewable resource. Mangroves provide a variety of forestry products. Examples of the main products include:

- Timber for housing, furniture, paper, boatbuilding, fish pots, scaffolding, railway sleepers, tool handles, fence posts, fishing and farming poles and match sticks.



Replenishment of the mangroves along the Palisadoes shoreline.

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## *The NWA Bridge Programme*

Bridges play an important role in connecting communities, industry, natural resource and tourism areas across Jamaica. The primary function of bridges is to carry pedestrians and motorists, over various types of natural features. They come in a wide variety of configurations and structure types. A safe and efficient network of bridges is a matter that is of interest and importance to all persons who use our roadways.

The National Works Agency is responsible for more than 700 bridges and large culverts across the island. A major objective of the National Works Agency is to ensure that the islands bridges and other public infrastructure are well maintained, renewed and improved to promote job creation, economic prosperity, and the quality of life of communities across Jamaica. To achieve this objective is undoubtedly a major infrastructure challenge facing the NWA and the country at large. The fiscal requirements needed for infrastructure are much larger than the resources presently available. To meet them, will be an ongoing challenge. Significant infrastructure investments in bridges have been made in recent years but the challenges remain. Despite these challenges the Agency is working to develop long term solutions to sustain bridges and other infrastructure in the years ahead.

### **NEW PROJECTS**

Of the seven hundred and thirty six (736) bridges currently inventoried on the National Works Agency's main road network, one hundred and thirty four (134) of these are listed as being "defective". This number is down from its previous one hundred and forty six (146). These bridges do not include any Parish Council structures.

Bridges are becoming increasingly susceptible to deck collapse due to the excessively high axle loads from over loaded trucks. These trucks are used to haul sand and aggregate for the construction industry. The National Works Agency recognizes that these bridges need to be replaced with new modern structures designed to accommodate expected loads.



Collapsed Jacob's River Bridge

The short to medium term objective is to have older type bridges retired from the system and replaced with more appropriate structural types. This will result in higher load carrying capacity bridges, easier to maintain and manage.

Bridges identified for replacement have deteriorated or have experienced some damage in usage beyond any measure of meaningful repairs. These bridges are Latium, Jacobs River Bridge, Lime Bush Bridge, Silent Hill Bridge and Kupius Bridge.

The Latium pier has collapsed and the Kupius is a planned replacement. The Kupius Bridge links Clarendon to the North Coast and its replacement is part of the general upgrading of the corridor. It is a heavily trafficked commercial route used by trucks carrying quarry material. The Silent Hill Bridge was washed away in 1997.

These bridges served their intended purpose while they were in full operation. However with the size and number of modern vehicles, several of these bridges have been impacted by the narrow space and load bearing capacity. Pedestrians are challenged by vehicular traffic as a result of the same narrow space.

The Jacobs River Bridge, Lime Bush Bridge and Silent Hill

*Continue on page 17*



### The Palisadoes Mangrove - Continued from page 15

- Textiles, tannins, waxes and dyes
- Fuel wood and charcoal
- Food and beverages – honey, alcoholic beverages, tea and condiments

## MANGROVE DESTRUCTION AND REHABILITATION

For many years Jamaican mangrove forests have been removed or destroyed for the construction of towns, settlements, roads, tourism development and due to various types of pollution. Between the 1950's and 1970's the importance of wetlands and their conservation was not in the context of the country's development plans. Consequently, the culture of dumping up and filling in mangrove swamps for various reclamation activities developed. It became rampant. Since that time, views and attitudes have changed. These have been accompanied by changes in legislation that protect coastal zones and natural ecosystems such as mangrove swamps.

## THE PALISADOES

The development of the Palisadoes area, which includes the Caribbean Maritime Institute, the Royal Jamaica Yacht Club, the Norman Manley international Airport and the roadway leading to Port Royal resulted in the destruction of acres of mangroves. These developments had no requirements for conservation or mitigation of the areas that were affected or the ecosystem functions of the mangrove forests.

## A HISTORIC AND MODERN APPROACH

The shore stabilization works along the Palisadoes Road shoreline by the National Works Agency represents a historic and modern approach to the restoration of the important mangrove ecosystem in the area. During implementation of this project over 4000 m<sup>2</sup> of mangrove forests along the harbor side of the roadway was removed. Despite this, works are underway to restore mangrove forest cover in selected areas along the stabilized shoreline. This process includes the re-introduction of young mangrove plants that were removed from the site in 2012 and the planting of over 5,000 other mangrove saplings that have been raised, nurtured and hardened in a unique mangrove nursery at the UWI Port Royal Marine Laboratory.

The newly added plants will have to be protected from the huge amounts of solid waste originating from the numerous gullies which float into the Kingston Harbour. The garbage that is lodged along the shorelines, are often large and heavy enough, furniture and drift wood, to break developing mangroves. The Life Sciences Department of the University of the West Indies has partnered with the National Works Agency in implementing this important project. It is anticipated that the mangrove forests and associated ecosystems will be successfully restored and that this will benefit all stakeholders.

### The NWA Bridge Programme - Continued from page 16

Bridge are located in deep rural farming communities. These bridges were initially constructed to provide services to farmers for the movement of their produce. In all cases, these bridges are now out of service as a result of deterioration or structural damage. The Latium Bridge provides services to a mix community of farmers and residences.

Other bridges and structures slated for repairs or replacement are the Harbour Head Bridge in St. Thomas, the Forum Bridge and Wood Hall Box Culvert in St. Catherine and the Azmart Box Culvert in St. Andrew.

The Harbour Head Bridge has been out of service for the better part of fifteen years. This is as a result of failure at the supports. It will be replaced with a new structure. The Wood Hall Box Culvert has been out of service for the better part of twenty years. It will be replaced with a new Box Culvert and significant improvement to the approach roads. Significant deterioration at the supports of the Forum Bridge warrants immediate attention. This bridge will be taken out of service for repairs during a three month period. A temporary bridge will be installed to facilitate the movement of traffic during the period of repairs.

The Azmart structure has become inadequate. As a result it will be replaced with a new Box Culvert and sidewalks. These bridges, "Harbour Head, Wood Hall, Azmart" will see the commencement of work s implementation in August 2015. The Forum Bridge is progressing through the procurement process and may come on stream for repair works at the end of August or early September 2015.



## *West Rural St. Andrew Road Repairs*

### **BACKGROUND**

The Stony Hill to Parks Road corridor is located in the mountainous sections of West Rural St. Andrew and spans a distance of approximately 11.70 Kilometres. Several periods of heavy rainfall resulted in blockages, damage and increased deterioration to the road pavement and other vital road infrastructure along this corridor. This roadway is a Jamaican Urban Transport Centre bus route. It is the principal corridor that links Red Hills to Stony Hill. It also serves as the greater part of the only main road linking Kingston and Stony Hill to the town of Above Rock and other districts.

This roadway accommodates a very high volume of traffic daily, especially during the peak hours and is the main arterial that link major economic activities between these major town centers, serves a large number of communities and districts such as Sherbourn, Guava Gap, Pinto, Cavaliers, Figure Post, Red Grounds, Salisbury Plains, Parks Road, Allman Hill, Rock Hall and Above Rocks. This road also provides access to public facilities such as police stations, Health Centres and scores of elementary, primary and secondary schools, including Rock Hall Primary and Junior High and St. Mary's College.

Numerous reports of frequent accidents and damage to motor vehicles have been made by members of the public, as a result of the poor condition of this roadway. There was an overwhelming level of concern and outcry from commuters about the serious security and safety risk that they are being subjected to, particularly at nights, when motorists are forced to "slow down" in order to maneuver through these defects along this road or when drivers swerve to prevent the vehicle from falling into potholes. There was also heightened concern by some residents, for the safety of school children and the elderly due to the fact that there is no side walk.

### **URGENT REPAIRS NEEDED**

This roadway was in need of immediate repairs so as to ensure public safety, prevent fatalities and allow for the safe and efficient movement of vehicular traffic across this heavily trafficked thoroughfare. It was proposed that hot mix asphaltic patching would be carried out at the most critical sections in addition to bushing and drain cleaning works.



A section of the rehabilitated Stony Hill to Parks Road corridor

Large pot holes, scour and other road defects creates serious safety hazards and challenges for JUTC Buses and other road users particularly at nights, during heavy rains or during periods of thick cover of fog.



Stony Hill - Parks Road Roadway being prepared for paving



## *Critical Drains and Gullies, in St. Ann, Benefit from Annual Drain Cleaning Programme*



Negro River Basin, in St. Ann's Bay before cleaning



Negro River Basin, in St. Ann's Bay after cleaning

Every year, in about April or May, many persons, and especially those in areas often affected by rain, begin worrying about the impending hurricane season. It is during this time that most persons start asking about drain cleaning programmes and start complaining about drains that need to be cleaned or repaired. This is quite understandable as since September 1988, and the passing of Hurricane Gilbert, most Jamaicans have started taking the Tropical Cyclone Period, also known as the Hurricane Season, seriously.

In preparing for the Hurricane season, the National Works Agency (NWA) perennially undertakes activities such as the inspection, maintenance and repair of the storm drain systems, to include gullies, in the public right-of-way and in drainage easements. Months in advance of the start of the period, local NWA officers identify critical drains, in the network of storm drains that may need to be repaired or maintained. In some instances assessments reveal that additional drains may need to be constructed and this is also taken into account in the preparation for the hurricane season.



Cleaning of drain within the St. Ann's Bay township before



Cleaning of drain within the St. Ann's Bay township after



## *Hot Mix Patching Undertaken along Several Corridors in Manchester and St. Elizabeth*

The National Works Agency has embarked on Hot Mix patching along several corridors in Manchester and St. Elizabeth.

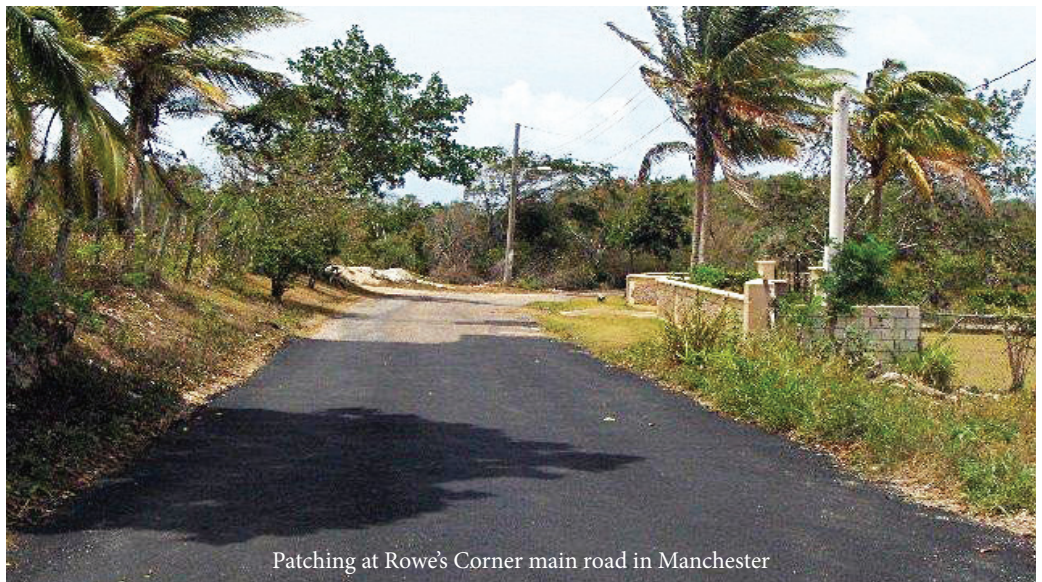
The patching projects began in early June and are scheduled for completion in six weeks by the end of July 2015. In Manchester patching was scheduled to take place along six corridors. These are Pusey Hill to St Jago, Shooters Hill to Caines Shop, Caines Shop to Highgate Hall, Cumberland to Williamsfield, Williamsfield to Greenvale and Rudd's Corner to Rowe's Corner. Approximately four thousand metres square (400m<sup>2</sup>) of patching was carried out on these road sections.

Patching began along selected St. Elizabeth roads in late June and is also scheduled for completion by the end of July. The roads that scheduled to be patched are Brompton to Cotterwood, Maggoty to YS Falls, Vauxhall to Union and Malvern to Southfield. Approximately four thousand metres square of patching was expected to be carried out on these road sections.

These repairs were undertaken by the National Works Agency Force Account patching crews. The projects were funded by the Road Maintenance Fund at a cost of \$10 million for each parish. It is expected that when patching is completed there will be improved traffic flow and riding comfort along these heavily trafficked corridors.



Patching at Pusey Hill in Manchester



Patching at Rowe's Corner main road in Manchester



Patching at Cotterwood St Elizabeth



## *Needed Rehabilitation of the Redlight – Newcastle – Holywell corridor now complete*

The Redlight to New Castle to Holywell (Hardwar Gap) roadway is one of the few north/south routes that connect the parishes of St. Andrew and Portland. It traverses the Blue and John Crow Mountains and passes several popular tourist attractions such as Strawberry Hills, Craighton, Coffee Blue, Holywell National Park and New Castle Training Camp.

### **NEW CASTLE**

New Castle is the oldest training camp site of the Jamaica Defence Force. From its founding until 1959, Newcastle was used by both British and (during World War II) Canadian regiments serving in Jamaica as a change-of-air camp. Some regiments moved to the hills completely, while others would rotate companies during the year. Others merely sent cadres for training at Newcastle. In 1959 the famous old West India Regiment was re-formed and Newcastle became the Federal Defence Force Training Depot, training recruits from all over the newly formed West Indies Federation.



Redlight - Newcastle after rehabilitation works

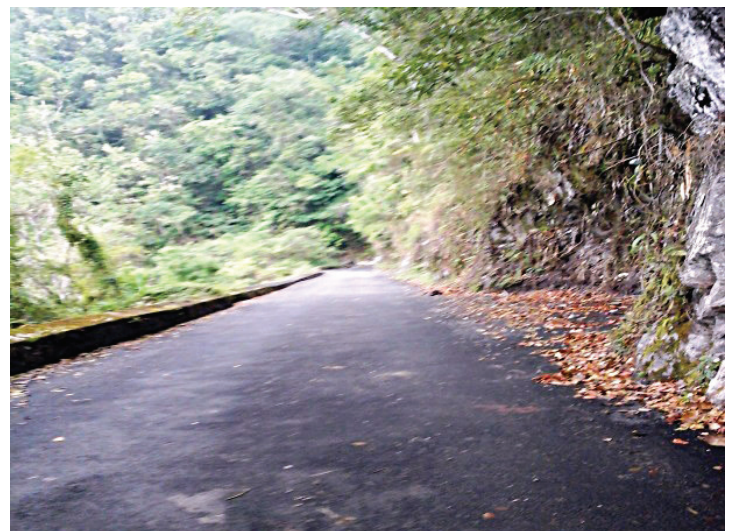
### **REPAIR WORKS**

Current and previous repair works along this corridor have been in response to damage caused by severe weather systems over the last decade. A considerable amount of the repairs carried out on this very steep roadway has been carried out to maintain its function as the primary access route to established communities and tourist attractions.

This roadway is susceptible to landslides and breakaways, situated as it is in the Blue Mountains on friable soils, shale's and sedimentary rocks. The area is scenic. It provides many locations for picnics, outdoor activities such as camping and biking and family outings.



Road section during rehabilitation works



Newcastle - Holywell after rehabilitation works



## *Patrick Lloyd Rose ... The Man, His Life and Times*



Director of Planning and  
Research at the NWA,  
Patrick Rose

In July 1986 Patrick Lloyd Rose was just another inexperienced civil engineer who was entering the hallowed halls of an established institution, the Public Works Department. Just a few months earlier he had graduated from the University of the West Indies, St. Augustine, Trinidad.

In the end none of this inexperience mattered. Today he is a seasoned professional and head of the Planning and Research Directorate at the National Works Agency. But how did Patrick accomplish this? What did it take for him to achieve this level of success and what's next for this hard working civil servant?

Contrary to what many may think Patrick does not think of himself as the "boss" or the "director". His colleagues do not consider it disrespectful to refer to him as Patrick. They operate like a family.

Despite what appears to be his take control style, Patrick is a gentle, soft spoken but assertive manager. He is focused and single minded in his approach. Those persons who know

him for many years may argue that Jamaica needs more hard working men like Patrick Rose.

### **THE EARLY DAYS - FROM JONES TOWN TO ST. AUGUSTINE**

Born on June 18, 1963 Patrick is the youngest of four children, two boys and two girls. His early recollection is of 39 Penn Street in Jones Town, and a large family home where he grew up. "It was a real residential area with several businesses, a doctor's office, a Solicitors office and a drug store. There was Kings Haberdashery where residents could purchase anything. You never had to leave Jones Town. Everything was available within the community. But that was the late 60's. Then changes came. The undesirable influences started to creep in."

What was it like growing up in this lower middle class community that had transitioned from being Jones Pen a former plantation. Patrick led a sheltered life. He recalls that Aunt Blanda, his father's sister was a teacher at Jones Town Primary School. So as a young child attending Jones Town

*Continue on Page 23*



Primary School someone always accompanied him to and from school daily. He usually, as he put it in his inimitable way "stayed in."

His older brother Fredrick had tremendous influence on him. "He was bright, he attended Wolmer's Boys School and he became a Civil Engineer" Patrick is unlikely to admit that he is also bright, but he will concede that he followed in his elder brother's footsteps by attending Wolmers Boys School and becoming a civil engineer.

Life for Patrick was fun. He has no complaints about his childhood. His was always a close knit family unit. While he was unable to visit his friends as often as he would have liked, they were always welcome to visit his home, and this they did. There was no sibling rivalry. The Rose family is one of the oldest and more established in Jones Town, "other residents always looked up to us and frequently sought my father's and aunt's advice on a range of issues. My mom was more withdrawn but appeared to be satisfied with her role as a mother. She paid a lot of attention to bringing up her children"

Teachers at Jones Town Primary were Patrick's extended family. The Headmistress, Mrs. Edna Somers took particular interest in his welfare. It was no different with Ms. Scott his Grade 1 teacher, Ms. Ivory his Grade 2 teacher or Ms. Phillips his Grade 3 teacher and Ms. Mason when he was in Grade 4. He skipped Grade 5 and went unto Grade 6. Patrick is reluctant to hazard a guess as to why he was allowed to skip a grade. But as you can well imagine the reason for allowing students to skip grades is because teachers think they are performing exceptionally well and above the particular grade level.

"Common Entrance classes were easy. I didn't do extra lessons or anything like that". He aced the exams and got his first choice, Wolmers Boys School. Patrick feels that the Common Entrance Examination was not as stressful as the present GSAT exam appears to be.

### THE WOLMERS' YEARS

He entered Wolmers in 1974 and again he came under the influence of female teachers. He says Mrs. Mills; his Mathematics teacher provided the environment during classes which enabled him to develop an enduring love for the subject. There was also Mr. Gilbert Smith who was his Physics teacher and the Deputy Headmaster.

Patrick recognized from early in his school life that his inclination was towards the sciences. This inclination was also influenced by both teachers and his brother Fredrick.

He did well in his "O" Levels, passing 8 subjects, including Mathematics, Physics, Chemistry and Biology. He spent a year in Lower Sixth during which time he applied for entrance to the UWI Mona.

### ON TO UNIVERSITY

He was accepted in the Faculty of Natural Sciences and studied Physics, Chemistry and Mathematics. He did well; receiving A's in all subjects and continued there in his second year.

It was at this point that he decided to change faculties and switch to engineering which was the long term goal he had set himself. He had applied to the Faculty of Engineering and was accepted at St. Augustine in Trinidad. The Trinidad years were a culture shock for Patrick. This was the first occasion that he had left the protection of his parents' home and ventured out, according to Patrick, "into the real world".

He had to learn to cook, wash and clean; basically taking care of his room space on hall at the campus. It was apparently not an easy transition from being Mommy's last boy, who had everything done for him. But he survived. He had to. He constantly reminded himself, "AGE QUOD AGIS", "Whatever you do, do it well."

His most memorable episode of his four years spent at the University in Trinidad was what he fondly refers to as, "Grubbing". As Patrick recalls, "Grubbing was rough." It is initiation for first year students who lived on Halls. "Canada Hall being a male Hall, Grubbing was awful. There was no time for sleep, working at nights, walking and holding frogs. You were constantly doused with buckets of ice cold water, when it appeared you were lagging behind and not keeping up with other Grubs. Or when you were asked serious questions and the answer was incorrect. You were required to know the name of every student residing on Canada Hall" Patrick survived all of this "Grubbing" and asserts that he is a much better and more adaptable person because of this experience. It has prepared him for life outside of University, the working world and coping with any situation.

He was awarded a European Union scholarship based on the results of his first year. As a result of the scholarship he was bonded to the Government of Jamaica and was required to work with a Government Department for five years.

### THE PUBLIC WORKS DEPARTMENT (PWD)

He returned to Jamaica in June, 1986 and began working with the Public Works Department in July of the same year.



Patrick Rose ... Continued from Page 23

Those five years have now become 29 years. He says with a wry smile, "It is now exactly 29 years". When he arrived at the PWD, he was placed in the Hydraulics Branch, which Patrick says, "was something else. So you come in as a young engineer. There is no other engineer in the Hydraulics Branch except for Mr. Alvin Rhoden, who is now deceased".

He wondered whether he would survive. "I was coming in as a young engineer not knowing what to do and my boss was going off on vacation leave the next week". So he was thrown in at the deep end. He could sink or swim. "I was young and inexperienced and had to be reviewing designs for implementation." He was the engineer who inspected quarries and did hydraulic designs for bridges. That continued for approximately two years, after which he was "kicked" upstairs to join Ron Brown the Director of Major Projects as Planning Engineer. That was when he became involved in the administrative management functions of the PWD.

He became involved in the preparation of the Public Sector Investment Programme, Formulation of the Capital Budget for road construction activities undertaken by the Public Works Department and formulation of new projects proposals for funding consideration by donor Agencies. He was also involved with the Road Planning Unit which was the technical side of the planning unit. "We routinely conducted islandwide road condition surveys and use the information to carry out feasibility studies for projects being proposed by the Government.

After four years in Major Projects he was transferred to the Directorate of Maintenance which is similar to the Directorate of Regional Implementation and Special Projects. "We were responsible for Routine and Periodic Maintenance of the roads". The Road Improvement Maintenance Project was funded by the World Bank and implemented by the PWD. Patrick was seconded to the unit which was under the Directorship of Karl Martin.

He says he enjoyed the experience, "because that is what the PWD is about and it achieved a great deal during its existence".

At the point when the Government of Jamaica had begun its most comprehensive Public Sector reforms, and the NWA replaced the now defunct PWD, Patrick was acting as Director of Construction vide Tony Gibson, who was on special assignment as Project Director of the Northern Jamaica Development Programme (NJDP).

In 1999 the Government had taken the decision to transform the PWD into an Executive Agency. It was hoped that through this change there would be greater efficiencies, transparency and it would effect savings in the Government's recurrent budget through a leaner organizational structure. Patrick, like every other individual who wanted to work with the new Agency, had to apply for the job in which he was interested. This he did. He applied for the position, Director of Planning and Research and was successful.

### NWA

Patrick has been instrumental in the formulation of many of the Agency's major projects and he is really satisfied with this achievement. These projects include:

- Flood Damage October – November 2001
- Deferred Financing Programme
- National Road Services Improvement Programme (NRSIP)
- Mabey Johnson Bridge Programme
- Inter-American Development Bank Road Improvement Programme
- Transport Infrastructure Rehabilitation Programme

He also oversees the operation and maintenance of the NWA Traffic Signal Plant and has oversight of the Development Control & Physical Planning Unit. It is responsible for making recommendations to the Local Authorities and NEPA for all subdivisions and building approvals as it relates to drainage and access to the main road network.

After 15 years in the job, he breaks into his customary broad smile, shrugs and after brief reflection says, "I have few regrets". However he feels that, "the number of changes that were proposed to make the new organization more autonomous has not been realized. But the experience has been great. One of my disappointments is the pace of implementation".

He thinks that by now, the new Agency would have established a fully functional and integrated Traffic Management system. This according to Patrick "would enable the technocrats to better manage congestion during peak flows. They would be able in real time to manage traffic movement and make adjustments to optimize signal timing."

This Director of fifteen years says he was working towards having a proper pavement and project management system in place by this time. This is not the case but he is not disheartened. Despite these setbacks, he has enjoyed working



#### Patrick Rose ... Continued from Page 24

at the NWA. Patrick says, "I have a wonderful staff compliment in the various departments. They have worked together well and have been very supportive of my efforts and the policies of the NWA.

Patrick was baptized at age 13 at the Ephesus Seventh Day Adventist Church in Jones Town. He attended a crusade there and was moved by the experience, decided to become a member of the church. You may not be surprised that this decision was also influenced by his brother Fredrick who was a practicing Seventh Day Adventist.

He has a love for his community. Patrick does a lot behind the scenes, participating actively in the Church's many community outreach programmes. He even found time to teach Mathematics to children who needed assistance but were unable to afford private tutoring. Classes were held in the Church's children department. He also organized a community six-a-side football competition.

Patrick is now a single parent, bringing up his daughters Jheaneel who is at High School in the US and Shariah who attends Wolmers Girls School. His wife Sharon died in 2011 after a long battle with cancer. From his reaction, it is obvious he still misses her. Almost moved to tears, he expressed his feelings very simply but poignant. "She was a good woman". He still shares a very close relationship with his mother and siblings. Patrick visits the family home at Penn Street every day to laugh and chat with them. Visits, it appears, he looks forward to and really enjoys.

Patrick Rose is an ardent domino player and lover of the game. His commentary during any game is extraordinary and fun to listen to, but his rivals at the famed Star Apple Tree, where his quest for domino superiority takes place, would argue that his love for the game far exceed his skills. He also loves Table Tennis and represented Wolmers in the Inter Schools Table Tennis Competition.

So what lies ahead for this remarkable man? For Patrick, the experience of growing up in Jones Town and observing its transition from an urban middle class community into what it has become today has taught him a lot. It has taught him how to deal with disappointments. Many of his contemporaries have died by the gun, several of whom were innocent bystanders. He has learned how to cope with these losses and manage his expectations. He has lost his aunt, his father and his wife. "So life is transient. But there is the bright side. The majority of people are kind hearted, helpful and loving. That gives me reason for hope". Sitting at his desk in his office at the Directorate of Planning and Research, Patrick Rose smiles. It is the smile of a happy man. As our Agency takes decisions on how to use limited resources, those decisions cannot be made without people with experience and courage, People like Patrick Rose.

#### Newcastle - Hollywell ... Continued from Page 21

The corridor has suffered some level of damage after each rain event and several retaining walls have been built in response to severe weather systems such as Hurricane Ivan. It is hoped that as funding is made available preventive interventions will be done on a regular basis to give residents and tourists the level of comfort and safety which is afforded their counterparts in other parts of the island.

### THE PROJECT

The rehabilitation project was intended to address the road surface which was in a deplorable condition at a number of sections along the route. The entire length of roadway was in need of bushing. In addition there were catch basins and culverts along the route that were completely blocked. There was also the need for the construction of a number of retaining walls at identified breakaways.

### THE NEED FOR REPAIRS

Failure of the National Works Agency to carry out needed repairs in a timely manner would result in continued deterioration of the damaged areas along the roadway and increased threat to the safety of residents. In addition it would result in increased costs when the repairs were eventually carried out and may even result in a lack of access for residents of the community. Furthermore there would be the potential loss of revenue from tourism and loss of the training site use for military maneuvers conducted by the Jamaica Defence Force.

### THE REPAIR WORKS

The repairs included preliminary such as removal of land slippage, bushing and trimming of banks, rock excavation, cleaning of catch basins and culverts and construction of a rip rap drain. Pavement works included pothole patch and repair and asphaltic overlay.

The repairs began in early March 2015 and as completed in four months, by July 8, 2015. It was undertaken at a cost of \$31.6 million. Financing was provided by the Tourism Enhancement Fund. The National Works Agency was responsible for the administration of the project. The contract was awarded to Marshall Construction Company Limited.



## *NWA Embarks on Corporate Area Improvement Programme*

The Corporate Area Improvement Programme is a continuation of the works which took place prior to the Visit of United States President, Barak Obama in April this year. This programme became necessary as several of the major corridors and intersections in the corporate area had deteriorated significantly. The objective of the programme was the improvement of affected corridors, making them safer and the driving experience more satisfying.

Consequently, several of the major intersections were treated with overlay and repairs to drainage structures. Among these intersections are Waltham Park Road/Hagley Park Road, Constant Spring Road/West Road, Spanish Town Road and Maxfield Avenue. Other works include overlay and patching.

The road section between Portia Simpson-Miller Square and Waltham Park Road was overlaid and Spanish Town Road in the vicinity of the entrance to the St. Andrew Technical High School. Approximately 33 road sections were patched including roads in New Kingston, Spanish Town Road in the vicinity of Riverton, Constant Spring Road, Washington Boulevard and Red Hills Road.

Significant drainage improvement works were also carried out along Hagley Park Road targeting damaged gratings and inlets. Reconstruction of inlets and kerbs at the intersection of Spanish Town Road and Maxfield Avenue was included as well as Arcadia Drive off Barbican Road.

The programme has been well received by stakeholders. This has been acknowledged by their calls to officers who undertook this programme.



Patching along Hagley Park Road in the vicinity of the Waltham intersection



Installation of new Grating along Hagley Park Road



# State Minister for Works, Richard Azan on tour



With contract in hand, it is all smiles. Construction of the new Hellshire Bridge can begin. From left Chief Executive Officer, NWA - E.G. Hunter, representative of Y.P. Seaton and Associates Company Limited - Calvert Mundle, Executive Director at the Road Maintenance Fund - Clement Watson, State Minister - Richard Azan, Acting Mayor of Portmore - Councillor Leon Thomas



Minister Azan and Officials of the parish council NWA and the JEEP secretariat cutting ribbon for the opening of Denbigh PC Road Clarendon



Minister Azan in discussion with NWA Construction Manager, Edwin McKoy and Dr. Winston Green, Member of Parliament South East St.Mary



Minister Azan about to cut the ribbon to officially open Lafa Street. He is joined by residents of Old Harbour



The Minister of State accompanied by JEEP Project Director, Mrs. Carolyn Gardner, looking at an area along the Robins Bay main road, St. Mary where Revetment works are needed

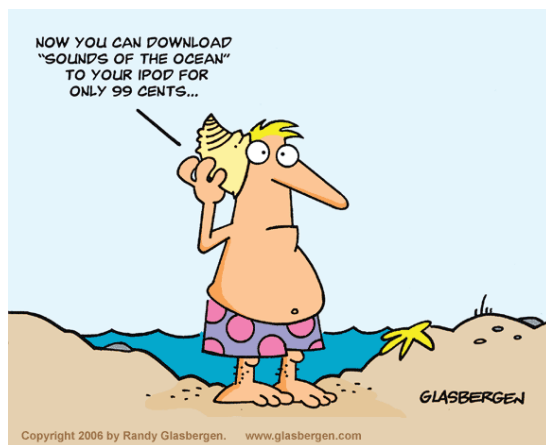


Minister Azan and the Acting Mayor of Portmore, Councillor Leon Thomas on a visit to the damaged Hellshire Bridge

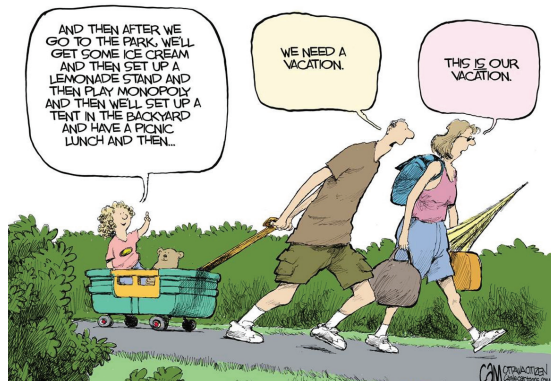




"Don't worry about burning the calories  
— that's already been done!"



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## 6 Important things the sun does for you

The sun is such a constant, reliable sight that few of us rarely acknowledge its existence. Sure, there are the sunbathers that like to bask in the rays, but many go to a tanning booth instead. Actually, the sun is the one of the primary reasons that life exists on earth. It has hidden benefits that prove it is a lot more than a gigantic lamp that lights your daily activities. It is a living, breathing organism.

**1. Food Energy** - Plants have specific organs in their cells that convert sunlight to food energy through a process known as photosynthesis. A plant will capture the sun's rays in a chloroplast through a chemical reaction and this conversion gives plants the ability to supply calories to all life. It is by plants that cows are fed and then the humans that feed on the cows. In this way, sunlight provides the source of food for all life on earth.

**2. Vitamin D** - One of the amazing things sunlight provides for us is Vitamin D. It is absorbed through the skin and converted to a state that the body can use. It usually only requires about thirty minutes of sunlight a day to acquire a minimum dose. Vitamin D is important for the creation and maintenance of bones. It is involved in the use of calcium in the body and performs many other important jobs.

**3. Happiness** - There have been studies that show that depression occurs in people during the change of seasons. As winter approaches and the earth tilts away from the sun, the days become shorter. This means less sunlight is available for our use. Many people find themselves depressed at this time of year, and the cause has been linked to the lack of sunlight. Indeed, people who sit under lamps that recreate the light spectrum of the sun have reported feeling happier and more energized. Sunlight also stimulates the pineal gland deep in the brain. This gland regulates our sleep/ wake cycles and triggers our bodies to activity or restful sleep.

**4. Warmth** - Life on this planet would not be possible without the warmth that the sun provides. Mercury and Venus have temperatures much hotter than most earth organisms could handle. If any water existed on these planets, it would be quickly burned off as steam. Yet even Mars which is the next furthest than earth from the sun is so cold that it is also uninhabitable. If water would exist on Mars and planets further out, they would be rocks of solid ice. In fact, some of the planets are ice. Our moon gets some of the rays of the sun, but is still so much colder than what we have here. A combination of the radiant light of the sun creating direct warmth and the atmosphere retaining and distributing that heat allows plant and animal life to thrive on this planet.

**5. Light** - It takes the light of the sun eight minutes to reach us, and still it is only a fraction of the powerful heat generated by our star. Yes, it is the obvious perk of having a sun, but we would have nothing if there was no light. We use it to plant our crops, find shelter from the predators of the night, and to pursue the things we enjoy most. Without the light of the sun, there would not be any life on earth. There would be no star to orbit and no heat to sustain us. In short, without the life giving light of the sun, we would be a species lost. In fact, we would not even exist.

**6. Precipitation** - If it were not for the sun evaporating the water off of bodies of water, we would not have rain or snow as we know it. The water that is turned to moist air rises into the atmosphere where it is affected by temperature to fall as the precipitation the temperature dictates. Without the sun, there would be droughts and most of the world would be a barren desert. Certainly the sun can also cause harm. It is the most common source of sun cancer and has been known to prematurely age our skin. Yet these are a small price to pay for the enormous benefits sunlight provides. The next time you are outside pull up your sleeves to catch some Vitamin D, hug a plant, and look around at the illuminated world created by our multifunctional sun.

Source: <http://www.helium.com/items/1225885-vitamin-d-sunlights-effect-on-the-body>