

Review of
Metropolitan Beaches
Funding and Operations
2007-2012

Prepared for the Metropolitan Beaches
Commission, May 2, 2014



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Executive Summary

Raphael and Raphael LLP (RRLLP) reviewed key operational metrics at the metropolitan beaches operated by the Department of Conservation and Recreation (DCR). The review covered the period since the Metropolitan Beaches Commission (MBC) made its last report, “Beaches We Can Be Proud Of,” produced in 2007, and analyzed select questions posed by the MBC. The purpose of this analysis was to provide the MBC with information that would serve to assess the extent to which the budgeting and operational recommendations made in the 2007 report were employable and/or effective, and to gain an understanding of current priorities for maintenance, programming, and budgeting and any impediments identified thereto.

Information was obtained primarily from DCR. Historical expenditure records were generated by DCR’s Administration and Finance department and modified by RRLLP to create appropriate comparatives and summary information where necessary. Forward-looking optimal budget projections were compiled by DCR staff through a process involving the gathering of ideas and data from managers and staff closest to the field, review by senior management, and review and revision by DCR’s Administration and Finance department. Additional information obtained from other parties is identified as such in context.

MBC’s 2007 report delineated targets intended to enhance levels of maintenance and programming to improve the beach-going experience of the people of greater Boston, and quantified the resource levels required to meet these targets. The report articulated baseline standards to be aspired to in the short-term and long-term. Beaches should be safe, clean and well-maintained during the peak summer and the late spring and early fall (known as shoulder

seasons). Additionally, they should be maintained in the winter season for off-peak-season users to the extent possible and for preservation of the condition of the resources at a level appropriate to the season (noting that some resources, such as the Hull bathhouse, are open and in use year-round). Improved grounds maintenance, trash removal and the upkeep of facilities were considered primary goals to be met in the short-term, with systems and protocols developed over time to ensure DCR's ability to uphold the new standard on an ongoing basis. Programming to enhance and diversify the beach-user's experience, completion of in-process capital projects and addition of new capital projects, were considered goals to be achieved in the mid- to long-term.

Public hearings conducted in 2013 indicated that metropolitan beach visitors were highly satisfied with numerous aspects of beach maintenance and the beach-going experience, consistent with the efforts and hopes expressed by the MBC in 2007 and as implemented by DCR between 2007 and 2013. Cleanliness of the beaches was identified as significantly improved, as were the quality of restoration and operation of facilities, staffing levels and responsiveness of staff, water quality flagging, shoulder-season access to facilities, and winter maintenance. Areas in need of continued improvement were noted, especially as regards increasing programming and the maintenance of capital assets, but categorically the perception is of meaningful and sustained improvement.

The goal of the current MBC initiative is to safeguard the progress made at metropolitan beaches, establish perpetual standards of stewardship for the metropolitan beaches, and to ensure adequate funding for the stewardship of DCR resources statewide such that the experience at the beaches does not come at the expense of other resources or regions. As the

MBC and DCR have both expressed that it is of critical importance that the correct funding levels be considered for fulfillment of DCR's mission statewide and across all resources so that the metropolitan beaches not be funded to the detriment of other DCR resources, DCR provided forward-looking figures for its operations in aggregate.

RRRLP also notes the region's public beaches are a recreational resource with the potential to attract and retain talent within the state, provide alternatives to risky behaviors in surrounding communities, and offer community development opportunities, all of which have important social and economic benefits.

DCR successes include staffing level increases in 2008 for full-time and seasonal staff, although not to the target optimal levels of staffing identified in the 2007 report. The 2008 staffing increases were offset by decreases incurred during the economic downturn experienced by all agencies in 2008 and following years. As the staffing levels related to beach operations were the ones most increased in 2008, the headcount decreases subsequently experienced throughout DCR have had a disproportionately negative effect on non-beach resources. The positive benefits achieved through changes in DCR operating structure and procedural changes mitigate, to some extent, the negative effects of decreases in staffing levels. During the period 2007-2012, DCR implemented in the North Region what it refers to as a "Complex Model," where a region is viewed and managed as a complex of resources with its own dedicated staff and maintenance facilities. This model was deemed so successful that it was subsequently rolled out to other regions and indeed to other resources managed by DCR.

Working with DCR, RRLLP has identified \$9.1 million as the all-in, agency-wide operating expenditure increase required in fiscal year 2015 to achieve optimal staffing and service levels:

DCR Optimal Operating Budget Increase

Full-time Permanent Staff	\$ 3,000,000
Replacement of Earmarks	2,000,000
DCR Seasonal Expenditures	3,000,000
State House Park Rangers	500,000
Parkway Street Lighting	<u>600,000</u>
Total	\$ 9,100,000

The \$9.1 million figure includes \$3.0 million for the addition of 60 full-time permanent staff, \$2.0 million to replace earmarks granted in FY2014 which are not guaranteed to continue, and \$4.1 million in maintenance operating accounts for seasonal expenditures, seasonal employees, State House park rangers, and parkway street lighting. Including the 60 staff mentioned above, all-in optimal staffing additions total 188, of which 64 are for non-beach operations state-wide; 15 are for planning, engineering, and forestry, all of which support the beaches; and 49, representing approximately \$2,450,000 of the \$3,000,000, are directly related to metropolitan beaches operations, as follows:

Exhibit ES1 – DCR Optimal Staff Additions at Metropolitan Beaches, by Position
 Source: DCR, modified by RRLLP

Position	Total number of new positions	Key functions
Forest and Park Supervisors	12	Provides second shift supervisor coverage for Complex seven days a week; the summer season upgrade will also assist in the overseeing of the beach operation and supervise and manage mowing crews and inmate crews; supervise labor yard.
Forest and Park Staff	2	Provide on-site staff for beaches seasonally.
Heavy Equipment Operators	1	Runs front end loader to clean beach and clear ramps.
Maintenance Equipment Operators	6	Performs beach maintenance, street sweeping adjacent roads and parking lots, loader operations for snow ops, winter debris clean up; performs algae removal.
Laborers	13	Perform maintenance ops year round.
Maintenance Equipment Mechanics	4	Seasonal mechanic to perform preventive maintenance.
Recreation Facility Repairers	5	Facility repairer dedicated to the Complex, but working for Park Support Operations to performs small maintenance repairs.
Facility Service Workers	1	Supervise the seasonal facility service workers; off season can assist in the rinks.
Master Marine Fisheries	1	Assist with daily staff, contractor etc. trips to Islands and help move needed equipment.
Rangers	2	Provide vital beaches ranger coverage and assist with events.
Visitor Services Supervisors	1	Increase programming and potential to give more tours.
Interpreters	1	Reporting to the Visitor Services Supervisor this position would implement coastal beach interpretive programs.
Totals	49	

Increased staffing at the beaches would allow for an extension of the seven day a week services at major bathhouses to shoulder season months April and November, when the beaches are still very active. In addition, some major bathhouses could be kept open seven days a week year round (for instance at Wollaston and Carson beaches). Locations heavily burdened by coastal storms would have additional staff providing emergency responses to all types of hazard weather events seven days per week, where five day per week coverage is the current norm. Sanitation pickup could be maintained at three times per week in the off season, and increased to five to seven days a week in the in the shoulder seasons and seven days a week in the peak season, up from three days per week in the shoulder season and three to five days per week in peak season. The additional positions making up the 60 include staffing in the Divisions of Engineering, Planning, Legal and Forestry, with indirect benefits to the metropolitan beaches. These positions help support ecological work at the beaches, capital project planning and fulfillment, and expanded management of permits including those governing the availability of recreational services and food offerings.

Additional lifeguard staffing at the metropolitan beaches includes headcounts per location as exhibited on the next page. This staffing represents an estimated \$470,000 out of the \$4.1 million in maintenance operating accounts for seasonal expenditures, seasonal employees, State House park rangers, and parkway street lighting.

Exhibit ES2 – Optimal Lifeguard Staffing at Metropolitan Beaches
 Source: DCR, modified by RLLP

Beach	Total Guards	Present Number of Shifts	Total Additional Guards	Projected Number of Shifts	Total Number of Guards	Benefit to Public
Constitution Beach	7	1	4	2	11	Ability to offer 2 lifeguard shifts from 10am-7pm
Nahant	18	1	8	2	26	Ability to offer Lifeguard Services from 10am-7:30pm and increasing the number of lifeguard stations from seven to 11 allowing a greater coverage to the beach
Nantasket Beach	36	1	10	2	46	Increase the number of lifeguard stations from eight to 12 allowing for greater public service at a major DCR beach
Revere Winthrop	20	1	20	2	40	Increase the guarded area at Revere Beach from seven lifeguard stations to 15 for public safety.
Spectacle/ Lovell	6	1	3	1	9	Increase coverage at the beach with overlapping supervisory coverage
South Boston	30	1	15	2	45	Ability to offer lifeguard services from 10am-7:30pm
Wollaston Beach	10	1	7	2	17	Ability to offer lifeguard services from 10am-7:30pm
Total	127		67		194	

Operating optimal figures presume a level of \$14.1 million in retained revenue, a figure unchanged from fiscal year 2014 to fiscal 2015. Although retained revenue potential is under rigorous exploration at DCR given the lifting of retained revenue ceilings in fiscal year 2014, it is expected that retained revenue opportunities will require a few years to reach their full potential due to information technology (IT) and staffing challenges that need to be overcome, the volume of agreements that need to be reviewed and potentially renegotiated, and the fact that some multi-year agreements will not be renegotiable until they reach expiration.

Over the course of its hearings, the MBC has identified more than \$80 million in prospective beach related capital projects (short, mid-, and long-term capital improvements), that includes approximately \$12.3 million in capital projects identified by the DCR. DCR identifies approximately \$12.3 million in prospective beach-related capital projects bring existing facilities into condition for optimal utilization. Capital expenditures on equipment for use at the metropolitan beaches is estimated at \$2.8 million to replace equipment reaching the end of its useful life and to add sufficient equipment to ensure that equipment availability is appropriate to staffing levels. DCR summarizes its anticipated needs as exhibited on the following page:

Exhibit ES3 – DCR Capital Equipment Needs, Metropolitan Beaches
Source: DCR

District	Complex	Equipment	Estimated Cost
Across beaches		16 F150 pickup trucks to support new staff from Beaches Initiative	\$416,000
Coastal	Nahant	Snowblower for Bobcat	5,500
Coastal	Nahant	Landscape trailer for power washer	5,000
Coastal	Nahant	Loader	125,000
Coastal	Nahant	Street sweeper	180,000
Coastal	Revere	Street sweeper	180,000
Coastal	Revere	Message board	7,000
Coastal	Revere	Arrow board	5,000
Coastal	Con Beach	John Deere Gator	12,000
Coastal	Revere	John Deere Gator	12,000
Coastal	Revere	F-350 one ton dump truck	40,000
Coastal	Nahant	CDL exempt F550 with large dump body, 4X4 with plow/sander	40,000
Coastal	Revere/Nahant	Kubota	19,000
Coastal	Nahant	Kubota	19,000
Coastal	Revere	Zero turn mower	12,000
Coastal	District Wide	Trash compactor trucks	180,000
Coastal	Nahant	Surf rake with tractor	127,000
Islands	Boston Harbor Islands	Wright standing mower	10,000
Islands	Boston Harbor Islands	4-wheel drive F350	32,000
Neponset Stonybrook	South Boston Beaches	Street sweeper	180,000
Neponset Stonybrook	Revere	Message board	7,000
Neponset Stonybrook	Revere	Arrow board	5,000
Neponset Stonybrook	South Boston Beaches	Kubota	19,000
Neponset Stonybrook	Dorchester Shores	Kubota	19,000

Neponset Stonybrook	District Wide	Trash compactor trucks	110,000
Neponset Stonybrook		Surf rake with tractor	127,000
Region wide		Surf rake with tractor	127,000
Revere		Surf rake with tractor	127,000
Islands	Nantasket	Eight lifeguard stands on wheels	352,000
Islands		Off wheel vehicle for transport of injured person	30,000
Islands	Nantasket	Jet Ski with sled	35,000
Islands	Islands	Jet Ski with sled	35,000
Islands	Spectacle	Mobi mat	5,000
Islands	Spectacle	Two small packers	220,000
Islands	Spectacle	Accessible kayak ramp	15,000
Total			\$2,839,500

Programming at the beaches was called out in the 2007 report as a necessary improvement area, with a target of five percent of the beaches budget deemed to be an advisable target to improve the experience of beach users. The estimated target expenditure on programming totaled approximately \$250,000 per year. This level of allocation to programs has not yet been attained.

Before addressing programming levels and expenditures, it is important to note the difference between what DCR includes in its programming expenditure figures and event counts compared to what Friends Groups include. DCR Accounting and Finance registers all permits pulled for beach use under Programs. This can include large events such as the highly publicized and well-attended sandcastle event at Revere Beach, and it can also include permits for family picnics; the latter are more numerous than the former. The MBC's intent in 2007 was clearly on increasing the level of programming that included not only the largest type of events, but emphasized

similarly unique and additive public draws that expand the utility of the beach as a venue, expand the versatility of the beach as a recreation opportunity, and expand the revenue potential for DCR and the communities through increased attendance.

DCR hosts 400 programs on the beaches, on average, every year, which include all events on the beaches which pull a permit. Program direct costs are estimated at \$7,000 per year, and staff costs are estimated at \$91,000 per year. In addition to this modest investment by DCR, beaches Friends Groups and supporters have invested on average \$130,000 per year on programming events at the metropolitan beaches, with 30 events held per year, as part of Save the Harbor Save the Bay's Better Beaches program. These Friends Groups expenses do not include staffing costs, as these events are typically organized and staffed by volunteers. The events hosted are typically one-time or annual events of a singular nature different from an average beach-going day. Such events include sandcastle contests, competitive swims, live concerts and similar events.

While events will of course vary in appeal and therefore participant numbers, with an annual attendance of 350,000, the Revere Beach sandcastle event serves to showcase what is possible. Publicly available benchmarks for Average Spend per Beach Visitor vary considerably, and with any event of this size there are direct costs to be noted, but presuming an exceedingly conservative Net Average Spend per Beach Visitor of \$10 (common benchmark figures range from \$50 to \$100 per person per day, for day-trip visitors), the potential benefit to the community for an event drawing 350,000 people may be estimated in excess of \$3,500,000.

With average annual DCR operating spending on beaches between 2007 and 2013 at \$5.7 million, a dedication of five percent to programming DCR-wide would total approximately \$288,000 per year, slightly higher than the recommendation in 2007. This dedicated expenditure is deemed crucial to lifting the beaches experience from its present, improved levels to the target ideal.

RLLP's analysis of DCR's retained revenue potential suggests that this could be a significant source of additional funds to support the agency and the metropolitan beaches. Retained revenue opportunities include potential revenue derived from parking lot fees, restaurants and concessions, vendor contracts, and innovative partnerships. RLLP constructed a model that indicated that changes such as charging for parking could result in significant additional revenue. Our model calculated the conservative impact of a one dollar increase in daily parking rates across existing fee-based lots for the metropolitan beaches at \$250,000. In order to take advantage of retained revenue opportunities, DCR would need additional staff to administer contracts and manage partnerships. At community hearings in East Boston and South Boston, MBC noted that the communities surrounding Constitution Beach and Castle Island/Pleasure Bay have indicated they would like to see multi-space meters installed. There are 193 parking spots at Constitution Beach, and 490 at Castle Island/Pleasure Bay, for a total of 683 spots. At just these two beaches, with a 100 day beach season, a parking fee of one dollar per hour, with paid parking hours from 8 AM to 6 PM (a ten-hour day) and 50% usage, the revenue potential is \$341,500.

The attainment of optimal staffing and service levels identified by DCR is predicated on navigating through a number of human resources impediments. First, state-mandated hiring practices curtail the speed with which DCR can hire and increase hiring expenses. The requisition and applicant review processes consume DCR staff time and create a slow-moving hiring environment in which the most competitive and attractive candidates can be frustrated and thus turn to the private sector for employment. Second, periodic hiring freezes not only delay the attainment of optimal staffing levels, but they can prove to be expensive if they interrupt completion of an in-process hire and thus necessitate a repeat of the entire process (as was the case in the spring of 2013, an example that DCR relayed during interviews, after a screening of 40 plumbing candidates for five positions was suspended due to a hiring freeze). As a result of both of the above, in order to provide promised services DCR is sometimes in the position of having to work around the hiring impediments by such methods as hiring and training seasonal workers instead of permanent staff, with a likelihood of having to incur the costs of a second hiring process and training period in the future, or engaging contractors whose all-in impact on the budget is on the order of more than twice as expensive than a permanent staff person. Third, the costs of fulfilling obligations to retiring DCR staff is not only expensive, involving the payout of a possible maximum of 10 weeks of accrued vacation time plus an unlimited amount of accrued sick time, it is also exceedingly difficult to budget for properly due to the fact that retirement announcements arise ad hoc throughout the year. The importance of having latitude in the budget to account for retirements is clearer if one considers the extent to which the payout of retirement obligations is effectively a budget cut. DCR may be obliged to pay double the replaced staff member's salary, outside the anticipated budget, for a period of three months or more of retirement obligations for the outgoing staff person, simultaneous with paying the staff

replacement their salary for that same period. Fourth, the demographics of the workforce at DCR indicate an aging population. Related to the previous point, DCR expects 2015 to be a year with a high number of retirements, with high associated retirement obligation payouts. As DCR's workforce ages, consideration must be given to succession planning and the perpetuation of institutional knowledge. Under current hiring rules, there is no room for crossover of new staff with outgoing staff for purposes of relaying acquired knowledge. Among other perils of lost institutional knowledge, this infrastructural inability to transfer knowledge to incoming staff is especially worrisome in light of the findings of the July 17, 2013 Official Audit Report of the Massachusetts Office of the State Auditor (OSA). The OSA report indicates both IT and staffing gaps, and points to an existing, acknowledged problem at DCR specific to being able to keep up with changing state regulations and methods with which DCR must comply. Additional impediments include those related to IT systems. IT limitations within DCR affect the ability to administer its agreements effectively, which has a direct impact on revenue collectible by DCR. The findings in the above-mentioned OSA report illuminate these issues. The OSA report speaks to a number of agreement types, which include those that are pertinent to the metropolitan beaches, such as licenses and agreements for boat and yacht clubs and concessions, among others. Per OSA, in 2011 DCR oversaw more than 537 agreements statewide, of which more than two-thirds were fee-paying, with associated income of \$2.8 million in that year; the exact number of agreements and related revenue potential was deemed uncertain by OSA during its audit, as a result of the potential unreliability of the existing system of managing agreements. The method of tracking and archiving agreements is so out of date that it was impossible to be certain that all agreements were represented for inclusion in the audit. In its audit of a sample of 127 agreements, OSA identified \$366,863 of uncollected revenue. The OSA report notes

deficiencies in the archiving of agreements, summarizing for operational purposes the key parameters of the agreements with which each party to the agreement must comply, coding of billing terms of the agreements into the billing systems for timely and accurate billing, and the management of renewals and expirations. IT system remediation is required to be able to optimize revenue in existing agreements, and to be able to evaluate existing agreements to determine where opportunities may exist to bring below-market fee terms up to current market levels.

DCR has established an admirable performance up-trend related to the metropolitan beaches in recent years, which has resulted in establishing new best practices it has rolled out statewide. Community perception of DCR efforts appears to be commensurately positive. Though DCR faces internal challenges related to IT and staffing, it has proved its efficacy with budget increases during the 2007-2012 period. The budget increases identified by DCR for optimal staffing and service levels are on a scale consistent with what it has managed to good effect in the recent past.

Based on our analysis and discussion with staff and leadership of the MBC, in order to achieve the goals of the MBC, RLLP believes the following actions are necessary:

- In 2015, move toward the all-in and the beaches funding numbers that are described above.
- Adequately fund the routine maintenance of capital assets in order to maximize the usefulness of capital expenditures.
- DCR should allocate additional dollars to programming.

- IT improvements and staff additions necessary for contract management and administration should be made to allow DCR an increased ability to administer agreements and perform management reporting of revenue and expenses.
- Retained revenue opportunities should be viewed as an augment to budget rather than as an offset.
- Similarly, to the extent that DCR's budget includes dedicated expenditures (earmarks), we recommend the budget be increased to meet them wherever possible.
- RRLLP also recommends that the commission advocate for two items in the environmental bond bill that was recently reported favorably out of the Joint Committee on Environment, Natural Resources and Agriculture:
 - 2000-7064 for \$20 million to improve water quality on the metropolitan region's public beaches,
 - 2000-7065 for \$40 million to design, construct, restore or enhance infrastructure on those beaches as well.

Introduction

Raphael and Raphael LLP was engaged by the Metropolitan Beaches to examine the Department of Conservation and Recreation’s capital and operating budget since the MBC’s 2007 report “Beaches We Can Be Proud Of,” and to identify trends and future priorities in programming, maintenance, and capital budgeting for the metropolitan beaches. RRLLP was charged with gathering and analyzing the financial data available for operations between 2007 and 2012 for the metropolitan beaches in aggregate, revisiting and reassessing the operational and resource requirements previously deemed optimal for the management and maintenance of these beaches, and identifying future programming budgets, capital plans and opportunities for retained revenue optimization.

Data Collection

Through a series of meetings during 2013 and early in 2014, RRLLP was provided with the information necessary to gain an understanding of the metropolitan beaches’ operations, expenditures, record retention, and future plans. Meeting participants included representatives of DCR, members of the Metropolitan Beaches Commission, and members of the public.

<p><u>See Appendix A – Meeting Schedule, Participants, Topics/Highlights</u></p>
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Consistent with historical trends, DCR (along with many state departments) is still subject to working with an imbalance between capital and operating budgets. Capital projects have been

initiated without sufficient funds budgeted for ongoing maintenance of the projects, whether equipment or structures.

Consistent with RRLLP's experience in the analysis for the 2007 report, and with OSA's findings in the Audit Report of July 2013, RRLLP found that data availability was not uniform for all requests. DCR's record retention systems are not set up to analyze data in a multitude of ways, for instance the ability to separate beaches data from activity at other sites.

Implementation of the IT systems changes required to support reorganizations, efforts that involve multi-year rollouts, further complicates this matter. When DCR was created in 2002, it merged two former agencies, Division of Urban Parks and Recreation (synonymous with the former Metropolitan District Commission) and Division of State Parks and Recreation (synonymous with the former Department of Environmental Management), but each still retained separate management entities that had individual restrictions on how funding could be spent and on which properties, and fostered a divided management environment. Through attrition of higher level staff and through legislative action, merging the funding accounts was undertaken to create one statewide parks division, the Division of State Parks and Recreation. From a data point of view, the impact of this unification was that two human resources and financial systems had to be merged and normalized, resulting in what may be considered typical gaps in comparability of data over time.

In RLLP's research in 2006, it identified that abundant historical data existed at that time, but that significant limitations existed as to data availability and comparability, as discussed above. This problem persists, and for similar reasons. Also similar to 2007, certain analyses were determined to be cost-prohibitive for this study, due to the likely expense that would be incurred in overcoming the obstacles described above.

Whether the data availability gaps are a result of insufficient granularity in the level of detail captured or a data-extraction problem is unclear; likely it is a combination of both.

As was discussed in the 2007 report, data archived even under New MMARS (Massachusetts Management Accounting and Reporting System) are accessible but are aggregated in a manner that supports routine management review, but which still does not offer the degree of granularity required for analysis such as this study. The data continue to require "scrubbing" by staff familiar with the record retention system, the geographic area, and operational functions relevant to the study in order to capture outlying data and remove extraneous data. This practice appears largely the same in 2013 as it did in 2006, although some coding differences have been undertaken to add granularity to management reporting and to reflect differences resulting from the reorganization, such as the South Boston beaches, formerly managed under the Harbor Region, now managed under the Boston Region.

Payroll expenditures continue to be recorded in the State's Human Resources Compensation Management System (HR/CMS), which has the limitation of data being tracked at a level too aggregated to allow for querying the database for location-specific information. Analysis is

contingent upon having had a high degree of manual intervention provided by DCR staff familiar with beach operations and locations, the various full-time and seasonal job positions, and the HR/CMS system. Capturing and scrubbing data in order to make it fully comparable to the 2007 report was cost prohibitive for purposes of this report.

Beaches included in the study are as exhibited on the next page:

Exhibit 1: Beaches Included in the Study

Source: DCR

Beach Name	Community	2007 Region	2013 Region
Constitution	E. Boston	North - Coastal	North Region –Coastal District – Revere Beach Complex
Lynn Beach	Lynn	North - Coastal	North Region –Coastal District – Nahant Complex
Nahant Beach	Nahant	North - Coastal	North Region –Coastal District – Nahant Complex
Revere Beach	Revere	North - Coastal	North Region – Coastal District – Revere Beach Complex
Short Beach	Revere	North - Coastal	North Region – Coastal District – Revere Beach Complex
Winthrop Beach	Revere	North - Coastal	North Region –Coastal District – Revere Beach Complex
Kings Beach	Swampscott	North - Coastal	North Region –Coastal District – Nahant Complex
Lovells Island Beach/Spectacle Island	Boston	Harbor	South Region – Islands District – Harbor Islands Complex (note Lovell’s no longer a swimming beach; replaced by Spectacle Island in 2007)
Malibu Beach	Dorchester	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Savin Hill Beach	Dorchester	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Tenean Beach	Dorchester	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Nantasket Beach	Hull	Harbor	South Region – Islands District – Nantasket Beach Complex
Wollaston Beach	Quincy	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Carson Beach – South Boston Beaches	S. Boston	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Castle Island	S. Boston	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
City Point Beach – South Boston Beaches	S. Boston	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
M Street Beach – South Boston Beaches	S. Boston	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex
Pleasure Bay Beach – South Boston Beaches	S. Boston	Harbor	Boston Region – Neponset/Stonybrook District – Castle Island Complex

Review of 2007 Key Recommendations

The goal of the 2007 initiative was to enhance levels of maintenance and programming in order to enhance the beach-going experience of the people of greater Boston. The report summarized DCR expenditures and recommendations for optimal levels of additional staffing and equipment required to fulfill the MBC's goal to ensure that beaches were enhanced to a level people would be "proud to use."

The summary of what a short-term baseline experience would look like included beaches that were, first and foremost, clean and well-maintained during the beach season, with off-season maintenance included as well. Secondly, beaches should be free of trash; lavatories, water fountains, and other facilities should be in working order; and the grounds should be maintained throughout the year, including street sweeping, grass cutting, snow plowing, and managing trash overflow from private-sector properties that abut DCR facilities. Long-term targets included implementation of new programs (at a target of five percent of the beaches budget dedicated to programs) to enhance and diversify the beach-user's experience, and completion of ongoing capital projects and addition of new capital projects as warranted.

At that time, DCR identified the need for 63 additional full-time staff and three seasonal full-time-equivalent staff, budgeting for associated payroll costs of \$2.8 million, as well as approximately \$500,000 annual operating costs for new equipment, and new equipment purchase costs of approximately \$1.4 million. DCR also acknowledged a historical imbalance between capital and operating budgets, not just within DCR but within many state departments, whereby capital projects were initiated without sufficient funds budgeted for ongoing maintenance of the

projects, whether equipment or structures. It also acknowledged the use of capital budget funds for operating purposes. This persists as an issue, having often to do with seasonal timing, in DCR's case, and also dealing with late-breaking events, like retirements and severe winter storms, which can be at best estimated but not accurately budgeted for.

Expenditure Trends and Initiatives 2007-2012

Based on feedback provided by DCR and public perception feedback obtained through the 2013 MBC Hearings, the key recommendations of the 2007 MBC initiative were enacted by DCR, with positive outcomes. Beaches were deemed by the public to be materially safer, cleaner, and better staffed and maintained in all seasons than in the past, with facilities largely restored to good working order for public use. Although some areas have persistent challenges (for instance, beach sand renourishment in Winthrop, the Nahant causeway capital project, enhancements to water quality management and flagging throughout the system) and others have unique and emerging challenges (such as the management of plover nesting issues in Revere), in aggregate the efforts put forth toward beaches by DCR in the years 2007 through 2012 were met with a high degree of user satisfaction by the general public. Detailed minutes from MBC Hearings held in each community are available on the Save the Harbor website, <http://www.savetheharbor.org/MBC2013/>.

See Appendix B – Sample MBC Public Hearing Public Comments 9/25/2013
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The key elements of DCR operations that were implemented to attain these levels of performance included staff additions; operational changes such as changes in the lines of

responsibility for staff whose work includes beaches, including accessible and accountable “beach managers” with direct authority and responsibility for each beach, as well as changes in the logistics of providing equipment for beach area maintenance and of initiating and fulfilling work orders; and completion of capital projects. In the earlier years of the period, 2007-2009, a higher operating budget and higher staffing levels appear to have underpinned this period of more positive public perception. In the later years of the period, 2010-2012, the changed reporting lines and changed logistics, as well as a substantial investment in free events and programs by Save the Harbor Save the Bay and beaches Friends Group, appear to have sustained the positive public experience in spite of staff reduction, attrition, and decreased operating budgets experienced by DCR and other state agencies as a result of the down economy in 2008 and following years.

[See Appendix C – DCR Beaches Accomplishments Presentation to MBC 4/8/2013](#)

[See Appendix D – DCR Beaches Accomplishments Presentation to MBC 12/11/2008](#)

The primary operational change was the creation of a “cluster” or “complex” model of beaches management. In lieu of having vertical silos for functional areas (for instance, maintenance) of which management staff, a Field Operations Team Leader, is responsible for performing tasks across a broad geography, the new Complex Model, as it is referred to by DCR, names a head of a geographical complex, who is responsible for all functions performed within the area. Though a large team is involved in accomplishing DCR’s goals at the beaches, this Complex Model aligns the overarching performance of a region with one manager, whose responsibility it is to ensure that all functions within the Complex are performed to enhanced standards. Implemented

first in the North Coastal District, this model was deemed so successful that it was later rolled out statewide, across all DCR facilities (not just beaches). Secondary improvements include improving the physical logistics in support of beach maintenance (for instance, co-locating equipment in closer proximity to the beach or beaches the equipment will be serving), and the streamlining of work order initiation and fulfillment to speed turnaround time on maintenance and repairs.

See Appendix E – DCR Memo re: Complex Model of Management 6/12/13

Capital project completion between 2008 and 2012 was extensive, peaking in 2008. After a period of delayed capital improvements in the preceding years, a substantial catch-up was accomplished during the 2008-2012 period on restoration projects and returning idle facilities to productive use. Approximately \$24 million was spent on beach-related facilities, infrastructure, and major equipment during this period. While some long-term projects are still underway (for instance, the Nahant causeway), DCR's acknowledged challenge is to see that the capital improvements made in recent years are maintained properly to preserve the longevity of the assets.

In the absence of optimal budget funding, DCR struggles to achieve its mission at the metropolitan beaches and in the system overall. The all-in, agency-wide operating expenditure increase required in fiscal year 2015 has been identified by DCR to be \$9.1 million, augmented by \$12.3 million identified by DCR as near-term prospective beach-related capital projects to round out capital projects already on the Master Plan. Without these funds, DCR finds itself in the position of having to make harder compromises in regard

to competing priorities. It must shift staff resources to high priority areas at the expense of others, for instance where safety issues must be prioritized over program offering, leaving some maintenance deferred, functions unperformed or services not offered. It must sometimes use funds from trusts or retained revenue to fund staffing in critical areas, which is inefficient, as these sources are a more expensive source of funding because of overhead costs associated with using these non-standard staff funding sources. DCR remains in the position of struggling against a tide of unresolved administrative matters related to agreements management, which are currently handled largely via hardcopy and without the benefits of electronic handling, with all of the associated implications for lost efficiency in permitting, hiring, collection of revenue on existing agreements, and maximizing retained revenue potential in the future. Lastly, DCR runs the risk of losing ground gained on the capital assets improvements undertaken in recent years if it cannot maintain the facilities well enough to protect the useful lives of the assets.

The \$9.1 million all-in operating figure includes \$3.0 million for the addition of 60 full-time permanent staff system-wide, \$2.0 million to replace earmarks granted in FY2014 which are not guaranteed to continue, and \$4.1 million in maintenance operating accounts for seasonal expenditures, seasonal employees, State House park rangers, and parkway street lighting.

The 60 full-time additions are critical for system-wide service provision, including maintenance staff and staffing for the administration of agreements management and for IT improvement. These proposed staff additions underpin functions such as performing tasks in keeping with published maintenance schedules at the metropolitan beaches and elsewhere, and shifting DCR agreements management from a paper-based system to one with at least

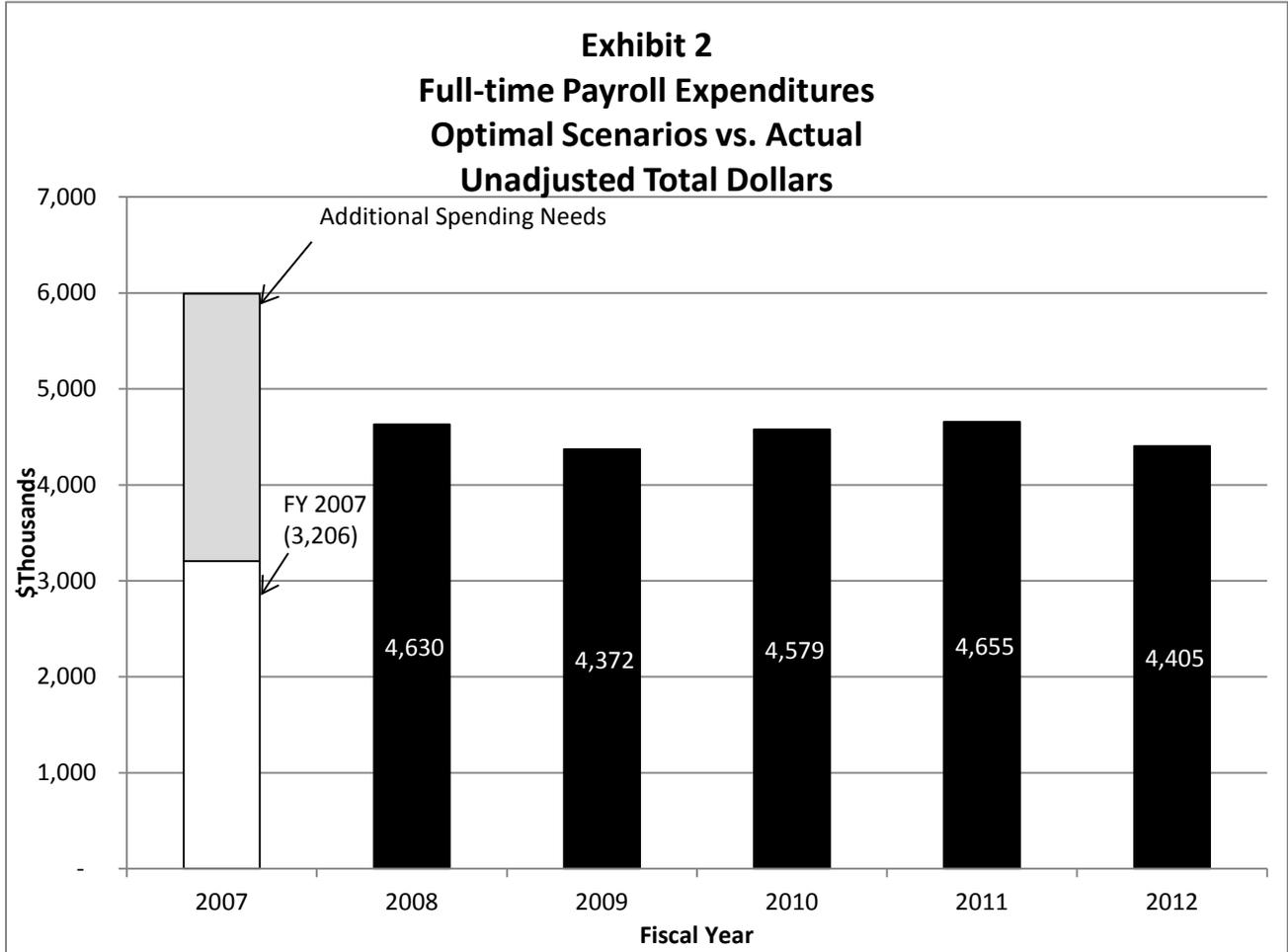
some use of electronic media and the potential benefits that can reasonably be expected from better use of IT and more direct supervision. The replacement of FY14 earmarks is directly linked to the DCR Parks Operations budget line item, one of the two line items under which the metropolitan beaches operations are primarily funded (DCR Seasonal being the other budget line item). The \$2.0 million represents five percent of the \$42.6 million spent on this line item in FY14. The \$4.1 million is allocated as follows: \$3.0 million for the DCR Seasonal budget line item, \$500 thousand for State House Park Rangers and \$600 thousand for Parkway Street Lighting. \$3.0 million represents 24% of the \$12.7 million spent on the DCR Seasonal line item in FY14. This is the line item through which seasonal staff, including metropolitan beaches staff, are funded. The addition of \$500 thousand for State House Park Rangers allows the state-mandated staffing level of the State House to be fully funded through its own line item; at present, DCR cannot staff the required level without paying for these rangers using funds from another line item. The addition of \$600 thousand for Parkway Street Lighting is another effort on DCR's part to more accurately reflect the expenditures necessary for this line item. At present, DCR cannot fully fund the maintenance necessary for street lighting through its own line item, and instead must shift funding from elsewhere. The addition noted would more accurately reflect the true costs. Parkway Street Lighting expenditures include those related to functions performed on the roadways on which lighting is situated. These facilities are based predominantly along the coastline, and their maintenance expenditures are impacted heavily by seasonal storm activity.

Staffing

Staffing levels between 2007 and 2012 peaked in 2008 based on efforts to implement staffing targets articulated by DCR during the research process of the 2007 MBC report. Though staffing levels did increase in 2008, they did not reach the articulated optimal staffing levels for either full-time employees or seasonal employees. Staffing levels held relatively steady during the economic downturn experienced by all agencies in 2008 and following (as was true for most sectors of the economy nationwide), in part because the increase in headcount at DCR in 2008 that offset decreases thereafter. Headcounts in 2012 were near 2007 lows. Hiring impediments in the form of procedural hurdles, hiring freezes, and operating budget constraints continue to be major obstacles to attaining the levels of performance, agency-wide, that DCR identifies as optimal for fulfilling its mission.

See Appendix F – DCR Headcount Summary FTE and Seasonal 2008-2012

Exhibit 2 on the following page shows the trend in full-time payroll expenditures since the 2007 report:



The clear portion of the first bar shows actual Fiscal Year 2007 expenditures for full-time payroll at \$3.2 million with 53 Full-Time Equivalent Staff (FTE's), and the stacked gray portion shows the additional needs identified in the 2007 report, \$2.8 million for 63 FTE's. While RLLP previously cautioned that any optimal additions should not be added to a prior year's expenditures, because prior year expenditures may not accurately reflect expenditure levels for current and future years, the presentation above is useful as an indication of proportional change and recent trends in expenditures. As shown above, full-time payroll costs have exhibited an

increase from actual levels in Fiscal Year 2007, rising to \$4.6 million in 2008, with 82 FTE's and approximately similar amounts and headcounts in 2009 through 2011, dropping to \$4.4 million in 2012 with 79 FTE's. Relative to optimal targets, however, in no year have full-time payroll costs met the additional levels recommended in the 2007 report, \$6.0 million in payroll expenses with 116 FTE's.

Exhibit 3 on the next page compares a baseline level of full-time staff headcount for Fiscal Year 2007 (represented by the white bar on the left side) with actual levels of full-time staffing in subsequent years. The stacked gray portion on the left shows the level of optimal additions that was identified in our previous report, at 63 additional FTE's. Headcount from Fiscal Years 2008 to 2012 did increase sharply from the baseline year, but did not rise to the level recommended in our previous report.

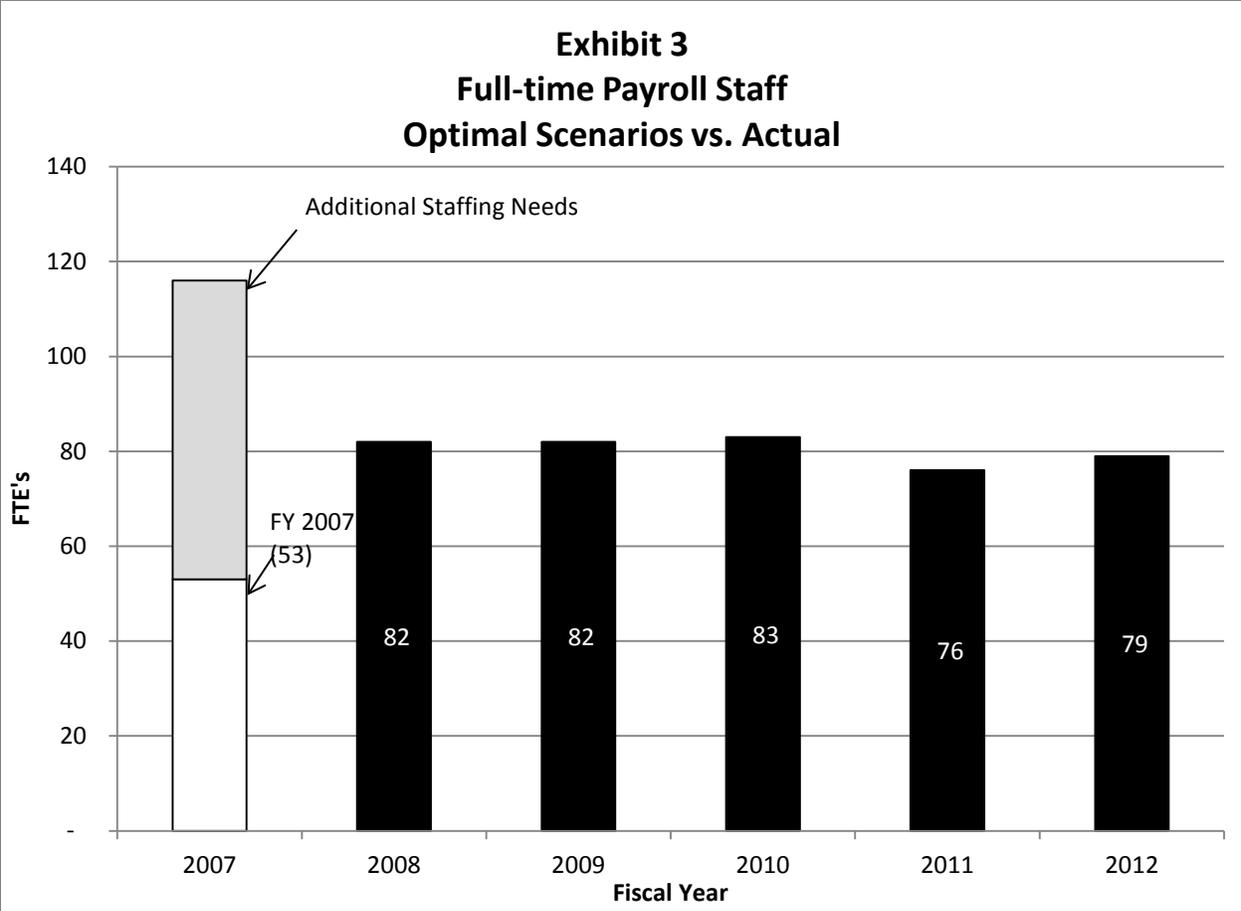
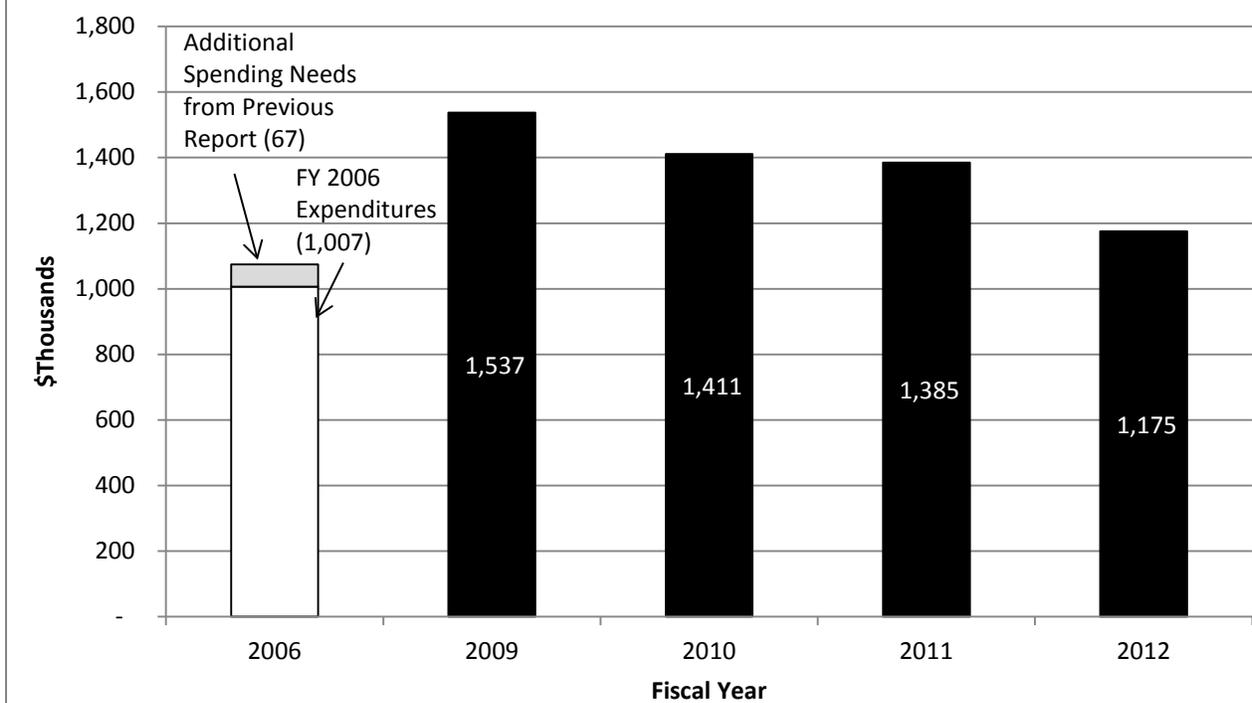


Exhibit 4 on the following page shows seasonal payroll expenditures were consistently higher than actual Fiscal Year 2006 seasonal payroll expenditures of \$1.0 million, in all subsequent years, peaking at \$1.5 million in 2009, although they have gradually fallen in fiscal years 2010 through 2012, to near-2007 levels at \$1.1 million. Note that comparable data for the 2007 and 2008 fiscal years were not available.

**Exhibit 4
Part-time Payroll Expenditures
Optimal Scenario vs. Actual**



Optimal additions identified for purposes of this report were devised by DCR in a review with current managers who have experienced successes in the Complex Model. This group was tasked with identifying optimal staffing given optimal service provision, in order to attain the maintenance standards mutually agreed as ideal by the MBC and DCR, ranging from sanitation to lifeguard coverage. DCR identified that an additional \$3.0 million in operating budget was needed over FY14 operational expenditure levels in order to fund 60 FTE positions to achieve optimal targets DCR-wide, and that a portion of the \$4.1 identified for additional operational expenditures is for an increase in seasonal staffing.

A point of note is that the metropolitan beaches' maintenance is peripherally affected by staffing levels in support divisions not directly tied to beaches. Where a staff person's primary function may be bridge work, there is a spillover effect on the beaches in two ways. The condition of those non-beach facilities has an impact on the beach-user's experience by influencing the condition of facilities adjacent to the beach, and additionally, where a staff person may be tasked with bridge work, some work may also be performed by that person directly on a beach on occasions when bridge workload is light and that person has available time. Although this impact is not directly measurable, it lends support to the view that a well-funded DCR overall will in turn improve the condition at the metropolitan beaches. An example of this overlap can be illustrated by the fact that the metropolitan beaches are unquestionably affected by the quality with which the agreements management function is performed, as all concessions at the beaches are handled by this group. FTE's in this group are not part of metropolitan beaches headcounts. The efficacy with which this function is performed is examined in detail in the Official Audit Report – July 17, 2013, Department of Conservation and Recreation Long-Term Permit and Lease and Employee Housing Programs for the Period July 1, 2010 through June 30, 2011, as performed by the Commonwealth of Massachusetts' Office of the State Auditor (OSA). The OSA findings are discussed in a separate section of this report.

Operations

In the years 2007-2012, DCR made substantive changes to its operational structure and processes. It implemented a Complex Model of management, initially rolled out at North

Coastal beaches in 2008, and ultimately rolled out agency-wide in 2012 after early implementation met with success. Concurrently, the Complex Model afforded DCR the opportunity to revamp processes and create new roles in order to better fulfill its mission.

In terms of structure, the beaches included in the MBC initiative are operated and managed by one of five DCR operational divisions, the Division of Urban Parks and Recreation. The beaches are in three of DCR's five regions, North, South, and Boston, spanning from Lynn in the north to Hull in the south. Facilities operations and management are under the supervision of the Acting Director of Urban Parks and Recreation, Regional Directors and District Manager, and Field Operations Team Leaders. The Regional Directors have responsibility for one of five regions in the Commonwealth. Across the five regions, there are 18 districts, each with a District Manager. The District Managers in turn are supported by 32 Field Operations Team Leaders, who each have charge of a Complex. The Field Operations Teams provide services across the parks, statewide.

<p>See Appendix H – Overview of DCR Unification</p>

The shift toward a Complex Model was initiated in 2008 and involved changing operations such that an individual manager became the contact point for operations at a particular beach. As this model met with success on a small scale, in 2012 it was in turn rolled out further within DCR to statewide operations. Fundamentally, the staff work in a smaller geographic area, managers and staff are known to the locals, and feedback regarding the experience of the community is direct. Part of the success of the Complex model is due to the change in organizational structure, which brings resources directly to the beach for year-round

maintenance (co-location of equipment and staff to be physically as near as is practical to the facilities they serve). With this model, DCR enhanced its effectiveness with respect to maintenance and care of the facilities, and the new model acts as a marker of the effective use of staff and funds.

DCR has focused its attention and resources to keep that reputation strong. DCR acknowledges that in some past initiatives, such as the Harbor Beaches Initiative, some communities and facilities were not specifically included in the list for funding (in the case of the Harbor Beaches Initiative, Revere, Lynn and Nahant were not included). By creation of a list and the dedication of resources only to the listed communities or facilities, other resources are at risk of being underfunded in favor of the named ones, and DCR's mission to provide the same quality of experience statewide is put in peril.

In conjunction with changing its organizational structure, DCR has also made efforts to streamline its processes. For example, it has redesigned its process of fulfilling work orders to decrease turnaround time from request to order completion. Creating a more rapid response for regular service was intended to reduce problems associated with deferred maintenance by addressing issues on a timely basis as they arise; however, in many cases DCR has had to employ contractors in lieu of permanent hires, which is significantly less cost-effective. DCR notes that its average expected all-in cost of a permanent tradesperson is projected at \$80,000 per year, while contractors may bill DCR at an average of \$100 per hour, or an annual-salary equivalent of \$200,000, which is 2.5 times the cost of the average permanent equivalent hire. Attendant concerns with the use of contractors include not only

the relatively higher expense, but also the lost opportunities for building institutional memory.

<p><u>See Appendix I – DCR Tradesperson Costs -- Employee vs. Contractor</u></p>
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New roles have been created within DCR to further the process improvement goals at the beaches and throughout the agency. Two roles in particular impact the metropolitan beaches. An Aquatics Director position was created in 2011. This role provides statewide oversight of professional standards and training for seasonal staff, overseeing procurement, recruitment, training, inspection, supervision, creation of new waterfront and pools manuals, creation of professional development events such as lifeguard competitions, and management-level staffing seven days a week to respond to any emergencies. The Assistant Director of Visitor Services role was created in 2011 as part of a DCR effort to improve programming, and assists with permitting and facilitating the efforts of Friends Groups.

DCR continues to define workplans for routine maintenance that include the scheduling and task-level details to be performed. The year-round maintenance component of beaches management is specifically addressed by DCR in its workplans in order to expand operations into the shoulder seasons of spring and fall. DCR notes that there are more than 135 beach facilities that need to be winterized and de-winterized each year (for instance, South Boston's water bubblers and foot showers). Additionally, some facilities are now open year-round (such as Wollaston). The capital projects completed in recent years have improved the

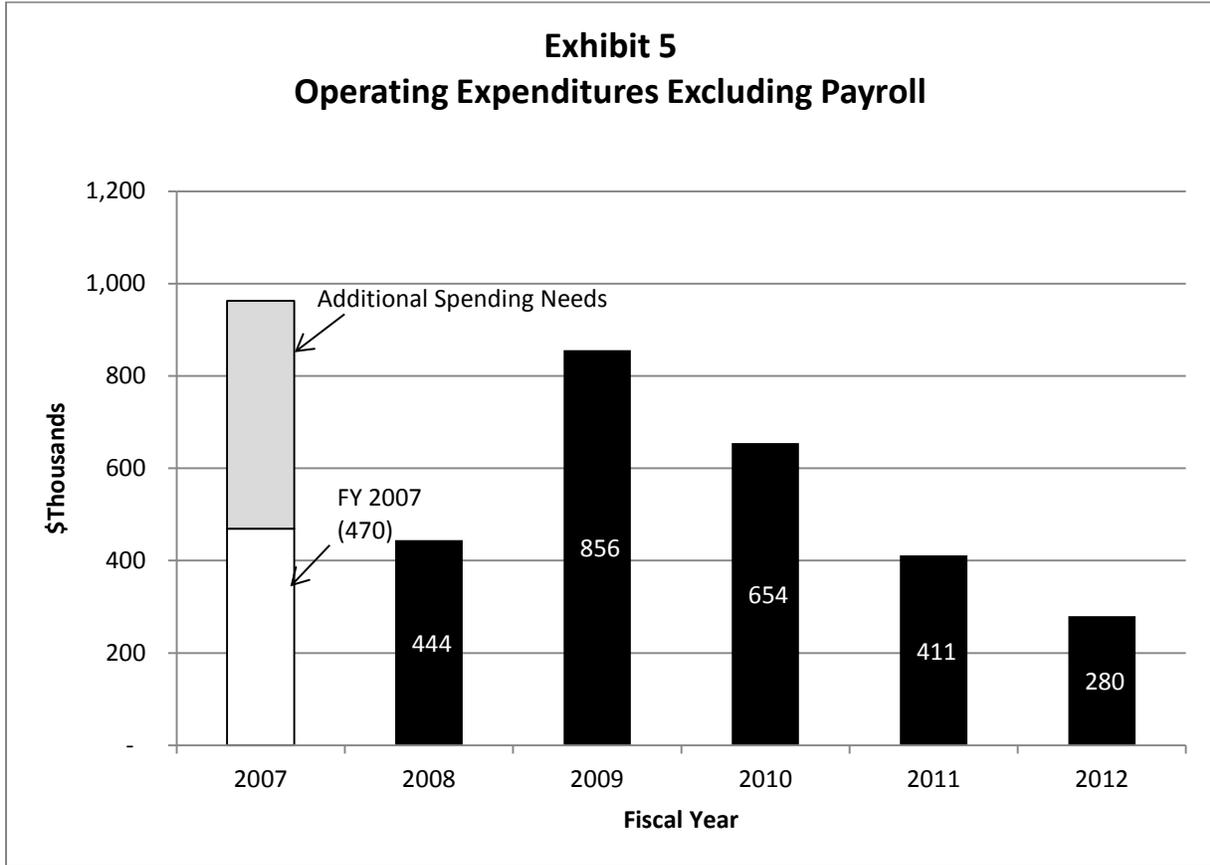
quality and nature of facilities provided at the metropolitan beaches. Beach users' expectations rise with such improvements, and DCR's operations have adjusted to accommodate them where possible (for instance, bathroom facilities remaining open in shoulder seasons). Winter maintenance responsibilities are not necessarily directly observable by the summer beach-going public, but these DCR duties are nonetheless critical for preservation of the state's assets and natural resources. DCR noted that there is complexity in accounting for these tasks, offering the example that winter plowing preserves roadways, which has the spillover benefit of lowering summer roadway maintenance costs. However, while neither the summer nor winter roadway work is considered a beaches cost, there is clearly benefit to the beaches.

[See Appendix J – DCR Winter Maintenance at Beaches](#)

[See Appendix K – DCR Sample Summer Workplan 2010](#)

The 2007 report noted that historically, in many state departments, there has been an imbalance between capital and operating budgets. In particular, capital projects are not supported by adequate levels of operational expenditures, or capital funds approved and released for capital projects are spent on operating expenditures. In our previous report, DCR had identified \$493,500 of additional necessary operating expenditures that were related to maintenance of the recommended capital additions at the metropolitan beaches. As discussed below, while it appears that the capital additions were put in service, the recommended increase in the level of other operating expenditures was not implemented. Exhibit 5 on the next page summarizes recent trends in operating expenditures, at the metropolitan beaches, excluding payroll:

Exhibit 5 Operating Expenditures Excluding Payroll



The clear bar on the left of the chart represents base year spending during FY 2007, while the stacked gray portion shows the optimal level of additions recommended in the 2007 report. The graph shows that actual expenditures were consistently less than optimal levels. The increases in other operating expenditures during FY 2009 and 2010 were largely due to increased spending on the Boston Harbor Islands Beaches, which increased from \$93 thousand in FY 2008 to \$451 thousand and \$298 thousand, respectively. FY 2011 spending for other operating expenditures at these locations fell to \$56 thousand.

DCR total operating expenditures trend as shown in Exhibit 6 on the following page:

Exhibit 6 – DCR FY07 to 14 Expenditures and Optimal Budget FY15
 Source: DCR, modified by RLLLP

Fiscal Year	Total Annual Operating Expenditures Including Retained Revenue (\$ Thousands)
2005	79.5
2006	81.5
2007	97.0
2008	98.1
2009	90.8
2010	84.6
2011	70.1
2012	69.4
2013	72.3
2014*	79.8
Optimal 2015*	86.9

* 2014 expenditures and FY15 optimal budget figures added by RLLLP

The FY15 optimal budget is \$7.1 million greater than FY2014 operating expenditures. Add to this the \$2.0 million of earmarks DCR received in 2014, which cannot be presumed for budget purposes to continue, and the total need expressed by DCR to achieve its optimal goals in 2015 is \$9.1 million over 2014 operating expenditure levels. These figures represent state-wide expenditures.

See Appendix L – DCR FY15 Maintenance Budget Summary with RLLLP Modifications

See Appendix M – DCR FY07 to 14 Expenditures and Optimal Budget FY15

Programming

Programming at the beaches was called out in the 2007 report as a necessary improvement area, with a target of five percent of the beaches budget deemed to be an advisable target to improve the experience of beach users. The previously recommended target expenditure on programming was approximately \$250,000 per year. This level of spending for programs has not yet been attained.

Before addressing programming levels and expenditures, it is important to note the difference between what DCR includes in its programming expenditure figures and event counts compared to what Friends Groups include. DCR Accounting and Finance registers all permits pulled for beach use under Programs. This can include large events such as the highly publicized and well-attended sandcastle event at Revere beach, and it can also include permits for family picnics; the latter are more numerous than the former. The MBC's intent in 2007 was clearly on increasing the level of programming that included not only the largest type of events, but also emphasized similarly unique and additive public draws that expand the utility of the beach as a venue, expand the versatility of the beach as a recreation opportunity, and expand the revenue potential for DCR and the communities through increased attendance.

DCR hosts 400 programs on the beaches, on average, every year. Program direct costs are estimated at \$7,000 per year, and staff costs are estimated at \$91,000 per year. Friends Groups and related supporters have spent on average \$130,000 per year on programming events at the metropolitan beaches, with 30 events held per year. These Friends Groups expenses do not

include staffing costs, as these events are typically organized and staffed by volunteers. The events hosted are typically one-time or annual events of a singular nature different from an average beach-going day. Such events include sandcastle contests, competitive swims, live concerts and similar events.

See Appendix N – Estimated Spending on Programs – DCR and Friends Groups

See Appendix O – DCR Memo re Programming and Associated Expenditures

While events will of course vary in appeal and therefore participant numbers, with an annual attendance of 350,000 the Revere Beach sandcastle event serves to showcase what is possible. Publicly available benchmarks for Average Spend per Beach Visitor vary considerably, and with any event of this size there are direct costs to be noted, but presuming an exceedingly conservative Net Average Spend per Beach Visitor of \$10 (common benchmark figures range from \$50 to \$100 per person per day, for day-trip visitors), the potential benefit to the community for an event drawing 350,000 people may be estimated in excess of \$3,500,000.

See Appendix P – Estimated Average Spend per Boston Visitor

With average annual DCR operating spending on beaches between 2007 and 2013 at \$5.7 million, a dedication of five percent to programming DCR-wide would total approximately \$288,000 per year, slightly higher than the recommendation in 2007. This dedicated expenditure is deemed crucial to lifting the beaches experience from its present, improved levels to the target ideal.

Capital Improvements

Capital improvements at the beaches in the years 2007-2012 have been substantial. Significant personal initiative and responsibility on the part of DCR management and staff underpins the success of these capital projects. The rehabilitation of capital structures such as bathhouses, the building of playgrounds, and the redevelopment of infrastructure such as roads and seawalls is a major contributing factor to the positive public feedback expressed to MBC during hearings in 2013 and in less formal settings throughout the period under analysis. In addition to capital structures, 2007-2012 also saw an increase in capital equipment purchases, with a peak year in 2008. Capital structures and capital equipment both require maintenance, and it is imperative that an adequate allowance for this activity is included in annual budgeting.

DCR capital spending at the beaches peaked in 2007 at \$12 million, following a level in 2006 which was nearly as high. However, capital spending levels in subsequent years were materially lower, falling to \$3.0 million in 2010 before increasing to \$8.6 million and \$8.2 million in 2011 and 2012, respectively. Beach complex capital spending is detailed in the exhibit on the next page:

Exhibit 7 – DCR Capital Spending by Fiscal Year by Location 2006-2012
Source: DCR, modified by RLLP

Capital Spending by Fiscal Year by Location (\$ Thousands)							
	2006	2007	2008	2009	2010	2011	2012
Lynn and Nahant Beaches	228	1,450	556	556	1,703	5,808	5,057
Revere and Winthrop Beaches	926	6,387	5,202	1,618	852	2,374	2,121
East Boston Beaches	1,345	179	614	138	1	2	494
South Boston Beaches	1,719	668	2	117	14	6	44
Boston Harbor Islands Beaches**	-	-	139	387	243	96	112
Dorchester Beaches	8	4	7	6	6	212	20
Quincy Beaches	3,019	2,629	1,131	151	1	-	53
Hull Beaches	4,568	846	260	249	133	135	272
Total	11,813	12,162	7,911	3,220	2,952	8,634	8,173

*Provided by DCR and summarized by RLLP

**Excluding Georges and Peddocks

See Appendix Q – DCR Capital Spending 2006-2012

Capital equipment additions for use on the beaches peaked in 2008 with purchases totaling \$912,138. The capital equipment additions made in subsequent years 2009 through 2012 totaled, in aggregate, \$414,863, which is less than half of what was spent in the single year 2008. The average capital spending per year for beach equipment from 2009 through 2012 was \$103,716. DCR staff relayed that capital expenditures in years prior to 2006 were low, leaving an equipment gap to fill, which partially explains the high number of additions required in 2008.

The down economy in 2008 and subsequent years was an additional cause of the relatively low expenditures in 2009 through 2012.

Major capital projects completed at the metropolitan beaches are listed in Exhibit 8:

<p><u>Exhibit 8 – DCR Capital Projects Completed at Metropolitan Beaches 2007-2012</u> Source: DCR, modified by RLLP</p>

Project
Constitution Beach Bathhouse Phase 1
Nahant Beach Halfway House
Wollaston Beach Quincy Shore Drive Reconstruction
Constitution Beach Bathhouse Phase 2
Revere Beach Boulevard
Nantasket Beach Playgrounds
Nahant Beach Playground
Nantasket Beach Rehabilitation
Rocky Beach Signalization
Pleasure Bay Shade Shelters
Ward Bathhouse
Winthrop Short Beach/Winthrop Beach Project
Constitution Beach Tennis Courts
Lynn/Nahant Causeway Project
Red Rock Interpretive Panels
Revere Beach Pavilion Restoration
Elliot House Restoration
Revere Beach Phase 2
South Boston - Head Island Shelter
Marine Park Bathhouse
Oak Island Sanitation/Shirley Street Bathhouse
Boston Harbor Islands Docks and Piers
Georges Island, Peddocks Island Visitors Center
Big Belly Compactor Installations

The complete list of capital projects completed, capital equipment purchases made, and capital projects in progress is more extensive, and is included as an appendix to this report.

See Appendix C – DCR Beaches Accomplishments Presentation to MBC 4-8-2013

Over the course of its hearings, the MBC has identified more than \$80 million in prospective beach related capital projects (short, mid-, and long-term capital improvements). In addition to capital expenditures already on the Master Plan, DCR has identified approximately \$12.3 million in prospective beach-related capital projects that would round out the capital program to upgrade existing facilities for optimal utilization.

See Appendix R –DCR Capital Project Ideas Compiled for MBC Meeting 11-8-2013 and Total Prospective Beaches Capital Projects

Known Systemic Impediments

DCR has expressed awareness of systemic impediments that management perceives as being limiting in the past, and future, if not remedied. The two main issues pertain to staffing and information technology. RRLLP performed an analysis of staff hiring and retirement practices in order to gain an understanding of staffing impediments. In addition, an analysis of the Office of the State Auditor's (OSA) report was performed in order to understand the ways in which staffing issues and IT issues align to pose compound problems.

Staffing

State-mandated hiring practices hinder expedient hiring and lead to higher hiring expenses. Although the system is designed to promote fairness and consistency in hiring practices, DCR has unique seasonal hiring needs that must be met timely. For attractive candidates for full-time permanent positions, the slow hiring process, paired with relatively low salaries compared to the private sector, can make DCR's positions less competitive than those of non-government employers. Related to state-mandated hiring practices is the limited degree to which DCR can implement IT-based solutions to aid in its hiring practices; the current level of IT optimization, from the candidate's viewpoint, is not up to market standards. A visit to DCR's website at <http://www.mass.gov/eea/agencies/dcr/> reveals that a candidate navigating through hiring may search within the site with ease but is instructed to apply in writing and is not able to file application materials electronically, both of which are standard practice in most private businesses.

Hiring freezes stop additions to full-time employee headcounts. Because the work still needs to be performed, some roles at DCR end up being “seasonalized,” meaning the full-time permanent hire position is changed to a seasonal six to eight month position. Although the role gets filled, the shift to seasonal work creates follow-on challenges of its own, namely the need to put work on pause after the eight months, or hire someone else meaning extra costs in training and lost opportunities for institutional memory to be built, and a mere deferral of the hiring costs that would have been expended anyway. Once instituted, a hiring freeze typically lasts two to six months. DCR had 40 open requisitions in 2013 that were delayed due to a hiring freeze. Freezes additionally raise hiring costs, as they suspend hiring efforts in progress, which results in additional applicant screening and interviewing work that must be re-performed when the freeze is lifted.

DCR must also pay retirement liabilities to retiring staff, which is not only expensive, involving the payout of a possible maximum of 10 weeks of accrued vacation time plus an unlimited amount of accrued sick time, but also exceedingly difficult to budget for properly due to the fact that retirement announcements arise throughout the year. The importance of having latitude in the budget to account for retirements becomes more pronounced when one considers the extent to which the payout of retirement obligations is effectively a budget cut. DCR may be obliged to pay double the replaced staff member’s salary, outside the anticipated budget, for a period of three months or more of retirement obligations for the outgoing staff person, simultaneous with paying the staff replacement their salary for that same period. DCR expects 2015 to be a year with a high number of retirements, with high associated retirement obligation payouts.

According to DCR, it experienced an average of 40 retirements annually during each of the last three years, and the cost of fulfilling retirement liabilities was in excess of \$500,000 per year.

The age demographics of the workforce at DCR indicate an aging population. The approximate age demographics of DCR employees are as follows:

- 20% of staff are over age 60
- 60% are over age 50
- 80% are over age 40

As DCR's workforce ages, consideration must be given to succession planning and the perpetuation of institutional knowledge. Under current hiring rules, there is no room for crossover of new staff with outgoing staff for purposes of relaying acquired knowledge. This poses difficulties in terms of hiring people who are able to be as efficient in their role as seasoned veterans and who have the depth of knowledge to satisfy the array of regulations with which the agency must comply.

See Appendix S –DCR Memo re Impediments to Hiring

See Appendix T – Age Demographics of DCR Employees

Information Technology (IT)

Data availability during 2013 for this analysis and the findings of the audit performed by the Commonwealth's Office of the State Auditor both point to an existing, acknowledged problem at DCR. The agency is unable to advance its IT capabilities on a sufficient and timely basis in order to keep up with changing state regulations. In addition, it has been unable to leverage available technology sufficiently in order to add efficiency in its processing and reporting of accounting data. IT limitations within DCR also affect its ability to administer its agreements effectively, which has a direct impact on revenue collection.

IT capabilities at DCR appear to be underleveraged for all of the agreement types that DCR maintains, both statewide and particular to the metropolitan beaches, including licenses and agreements for boats, yacht clubs, and concessions. Per OSA, in 2011 DCR oversaw more than 537 agreements statewide, of which more than two-thirds were fee-paying, with associated income of \$2.8 million in that year; the exact number of agreements and related revenue potential was deemed uncertain by OSA during its audit, as a result of the potential unreliability of the existing system for managing agreements. The method used for tracking and archiving agreements is so out of date that it was impossible to be certain that all agreements were represented for inclusion in the audit. DCR notes that most of its agreements are archived in hardcopy format rather than electronically, and that the paper files are held in an offsite location. Additionally, there is no formal link between the agreements and the accounting and billing systems. In its audit of a sample of 127) agreements, OSA identified \$366,863 of uncollected revenue

<p>See Appendix U – OSA Report 7-17-2013</p>
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The OSA report notes deficiencies in the processes in place for archiving of agreements, summarizing for operational purposes the key parameters of the agreements with which each party to the agreement must comply, coding of the terms of the agreements into systems for timely and accurate billing, and the management of renewals and expirations. IT system remediation is required in order to be able to optimize revenue from existing agreement terms, and determine where opportunities may exist to bring below-market fee terms up to current market levels.

IT issues have a significant staff component. These relate to having the time or specific job responsibility to use the available systems or develop specific tools for DCR's use, and include:

- Systems sufficient to track agreements
- Staff tasked with loading and monitoring agreement data
- Staff tasked with properly using the State's billing systems
- Staff tasked with scheduling renegotiation of agreements nearing expiration
- Having agreement-management processes written and understood and properly instituted

Given the age demographics of DCR employees, loss of experienced staff compounds the difficulty of managing agreements. Another consideration is the parameters under which DCR operates in regards to managing agreements. For instance, the agency cannot enter into an agreement with a duration of more than five years without prior legislative authority due to the constraints of Article 97 regarding the disposition of open space and parkland. If legislative authority is granted, the vendor bid must be routed through DCAM (the Commonwealth's Division of Capital Asset Management and Maintenance). For some types of vendors, it may be more appropriate for DCR to be able to self-administer contracts of longer duration, perhaps up to 10 years. A five-year contract, for instance, may be too short of a duration for some potential concession vendors to make the capital investment necessary to rehabilitate a beach-based facility.

In addition to IT advances, DCR's ability to administer agreements would be improved by a review and restructuring of certain agreements' requirements. As a result of deficiencies noted in the OSA Report, DCR may need to demonstrate some improvement in its agreements

management function before opportunities for greater self-administration are practical, but there may be areas where there is currently room for DCR to shift low-priority agreements to a review schedule that demands less resources, thereby allowing high-priority agreements to receive more attention. This is a project for the long term. By revisiting the terms of a variety of agreement types and considering restructuring where appropriate (duration is only one of many possible agreement terms), DCR may be able to minimize the extent to which it must devote resources to low-dollar-amount contracts and instead devote more of its resources to higher-dollar or more competitive contracts, ensuring that resources are allocated in a well prioritized manner.

A separate point relates to permitting, the processes for which are summarized on DCR's website link at: <http://www.mass.gov/eea/docs/dcr/permits/2014-special-use-permit-app-instructions.pdf>.

This source indicates that acquiring a permit via DCR is not possible electronically. For a person or group to initiate a special use permit to use a facility, he or she must first print the form and then mail in the hardcopy and pay by check or money order, and applications are accepted for only a portion of the year (November 1 to May 1). Not only is this out of date and cumbersome from the point of view of a public swiftly gaining comfort with handling administrative tasks on a phone, let alone a computer, but DCR, by having to handle paper, loses efficiencies to be gained by staff in reviewing, archiving and issuing the permit, accepting payment, and maintaining the schedule of events and special uses.

Forward Looking Targets

The areas identified by DCR where the most improvements can be made do not differ materially from those identified in 2007, although the emphasis has changed. Returning staffing to optimal levels achieved in 2008, adjusted for the staffing levels that current managers view as optimal, is still critical. Furthering the programs at the beaches is a natural next step to take user experience to a higher level, and partnering with recreational vendors to provide additional ways to utilize the property, and working with Friends Groups to host events such as concert series, continues to be important and was the area of least emphasis in 2007; the emphasis is higher now. Maximizing the revenue-generating potential of DCR resources to the greatest extent possible (in light of IT and staffing challenges noted earlier) is a higher priority. Additional capital improvements have also have also been identified so that aging facilities can be upgraded to the standard set in recent years, with plans to maintain the newly-renovated facilities to the standard to which users have recently been introduced and to which they've been so publicly and positively responsive.

Optimal Staffing

Full-time permanent staff are preferred for maintenance, as the continuity and institutional memory gained are important to retain. Although some seasonal workers stay with DCR for many years, there is a risk of higher turnover associated with seasonally staffed positions. As was true in 2007, there is an 8-month maximum that a seasonal worker may work in any 12-month period; beyond eight months, that seasonal worker may have to be re-categorized as a permanent, full-time employee. DCR's goal is to rely less heavily on seasonal workers for

year-round maintenance, as honoring the 8-month cap leads to disruption in the continuity of maintenance operations.

The hiring impediments noted above prevent making hires in an expedient fashion.

Again, consistent with 2007, hiring involves a multilevel authorization process, with turnaround time from requisition date to hire date sometimes exceeding 12 weeks. A streamlined hiring process would be beneficial, and could include removal of some of the authorization levels for junior staff or staff hired at salaries below a specified threshold, as well as implementing an online application system with best practices borrowed from the private sector, including the ability to apply online (on the applicant side), and the ability to review and archive application materials online (on the agency side).

Competitive impediments have not changed materially since 2007, continuing to be relatively low baseline salaries and poor advancement opportunities. Where advancement opportunities exist, they can be counterproductive to employee retention, resulting in employees seeking employment elsewhere once they have completed the additional certifications (or similar accreditations) that they were encouraged to pursue. We continue to recommend a review of salary levels and the speed with which recognition of achievement occurs.

Exhibits 9 and 10 on the following page show DCR's staffing pattern for optimals identified for the near future, for full-time hires and for lifeguards in particular.

Exhibit 9 – Optimal Staffing at Metropolitan Beaches, by Complex
Source: DCR

Complex	Total Number of Positions	Number that Are New
South Boston - Dorchester - Quincy	86	19
Nahant - Lynn	47	9
Revere - Winthrop - Constitution	66	11
Nantasket	44	5
Spectacle - Lovells	13	5
Totals	256	49

The additional cost associated with the optimal increases is estimated at \$3.0 million annually, based on DCR estimated average salaries. Roles encompassed in the exhibit above include the addition of shift supervisors to ensure that maintenance functions can be performed seven days a week, heavy equipment operators, mechanics and repair laborers, facilities services workers, and visitor services staff. The related appendix shows the optimal headcount additions by role at each Complex.

See Appendix V – DCR Optimal Staffing Detail by Complex

Optimal staffing of lifeguards includes the addition of 67 guards, as identified by DCR in the exhibit on the next page. The additions represent an increase in the number of guards on site at various locations as well as an expansion of how early or late in the day the waterfront is guarded.

Exhibit 10 – Optimal Lifeguard Staffing at Metropolitan Beaches
 Source: DCR, modified by RLLP

Beach	Total Guards	Present Number of Shifts	Total Additional Guards	Projected Number of Shifts	Total Number of Guards	Benefit to Public
Constitution Beach	7	1	4	2	11	Ability to offer two lifeguard shifts from 10am-7pm
Nahant	18	1	8	2	26	Ability to offer Lifeguard Services from 10am-7:30pm and increasing the number of lifeguard stations from seven to 11 allowing a greater coverage to the beach
Nantasket Beach	36	1	10	2	46	Increase the number of lifeguard stations from eight to 12 allowing for greater public service at a major DCR beach
Revere Winthrop	20	1	20	2	40	Increase the guarded area at Revere Beach from seven lifeguard stations to 15 for public safety.
Spectacle/Lovell	6	1	3	1	9	Increase coverage at the beach with overlapping supervisory coverage
South Boston	30	1	15	2	45	Ability to offer lifeguard services from 10am-7:30pm
Wollaston Beach	10	1	7	2	17	Ability to offer lifeguard services from 10am-7:30pm
Total	127		67		194	

See Appendix W – DCR Optimal Lifeguard Staffing Detail at Metropolitan Beaches

See Appendix X – DCR Memo re Optimal Staffing Detail

Programming

The 2007 MBC report articulated a target of five percent of beaches operating spending for programs. With average annual DCR operating spending on beaches between 2007 and 2013 at \$5.7 million, a dedication of five percent to programming DCR-wide would total approximately \$288,000 per year, slightly higher than the recommendation in 2007. This dedicated expenditure is deemed crucial to lifting the beaches experience from its present, improved levels to the target ideal.

While the new statewide Aquatics Director provides important new standards of safety and uniformity of hiring and training of beach and pool staff statewide, the population density in the metropolitan areas and high concentrations of usage at the metropolitan beaches calls for additional programming specifically targeted at the metropolitan beaches.

DCR's model of programming involves in-kind staff support to Friends and community groups that are hosting events such as concert series, boating, and festivals. In order to host an event, the Friends or community groups will apply for a permit to use the beach in the manner they desire. This process involves downloading a file from the internet, printing it, and mailing it in with a check, and thus is another area ripe for being made electronically performable. DCR then chooses in what means it is able to support it, and makes a determination whether the project or usage is deemed appropriate. DCR may expedite the permitting process or waive the fee, and

may provide staff to assist with the event at its own expense (and with no charge to the organizers).

DCR may be able to revisit the “five percent of operating budget” target to boost the level of programming and/or its level of support to Friends and community groups in order to provide the beach users with a more diverse way of using beach resources.

Revenue Potential – Retained Revenue

Optimal operating expense figures presume a level of \$14.1 million in retained revenue, a figure unchanged from fiscal year 2014 to fiscal 2015. Although retained revenue potential is under rigorous exploration at DCR given the lifting of retained revenue ceilings in fiscal year 2014, it is expected that retained revenue opportunities will require a few years to reach their full potential due to IT and staffing challenges that need to be overcome, the volume of agreements that need to be reviewed and potentially renegotiated, and the fact that some multi-year agreements will not be renegotiable until they reach expiration.

DCR has historically had access to retained revenue. The retained revenue model that was in place prior to 2012 was that revenue earned through DCR leases was capped at approximately \$12 million. Retained revenue was segmented as to source and use, with individual caps, and had to be allocated according to these constraints. The retained revenue cap was raised in 2012 to \$17 million for DCR statewide. DCR can now keep 80% of every additional dollar raised, and the remaining 20% goes back to the General Fund. Additionally, the sources and uses constraints were lifted, and retained revenue may now be considered as one pool which can be allocated by DCR’s Accounting and Finance department.

While this change provides DCR with new opportunities to maximize potential revenue, it is also fraught with challenges that must be overcome in upcoming years related to the management of agreements, as discussed above and in the OSA report. It also bears mentioning that revenue is not a pure windfall. For example at a parking lot, an increase in activity may require direct costs such as staffing, management of cash collection, and additional trash barrels that must be emptied at least daily, and it may create additional indirect costs such as those associated with increased attendance at the beaches.

DCR staff participates on a limited basis in the direct collection of revenue. Revenue-generating activities are in most cases contracted out to third parties. DCR reports holding more than 3,500 agreements that it must administer. The types of agreements that are relevant to the opportunities at the metropolitan beaches are a subset of those described in the OSA report. They are:

- Permit Agreements
- Memorandum of Understanding (MOU) Agreements (confirm)
- Lease Agreements

Those agreements involve the following types of uses/licensees/permittees:

- Boat and Yacht Club
- Concession
- Cottage
- High Ground
- Legislatively Authorized Lease
- Memorandums of Understanding
- Utility Provider

See Appendix U – OSA Report 7-17-2013

The maximization of retained revenue potential requires numerous priorities to be established and the related tasks assigned. Additional staff must be added at DCR for the administration of agreements. IT systems must be more fully utilized or developed in order to create a system through which various agreement parameters can be monitored and linked to accounts receivable systems. High-potential-income agreements due for renewal must be revisited ahead of lower-income ones. Processes must be put in place so that collections on existing agreements are pursued on an ongoing basis. DCR seeks an increase to the dollar limit at which a contract must be solicited through a formal proposal process, and an increase to the duration of contracts it may negotiate on its own behalf. Given the vast number of agreements DCR must administer, below a certain dollar amount it simply may be more cost effective to limit the RFP process; similarly, the terms of some contracts should be increased (from five years to perhaps eight or 10) to reduce the frequency with which they must be negotiated, thereby allowing DCR to put its attention on agreements with more revenue or complexity associated with them. As DCR is restricted from negotiating certain contracts on its own behalf, this limit should be relaxed on an appropriate set of contract types that are considered low-risk and/or below a certain revenue threshold.

Even where DCR can most directly influence the revenue-generating potential, such as via access fees, there are practical limitations on the increases. These have to do with uniformity of charges across a region or type of facility, and the type of fee charged (for instance, user fees versus parking fees, and consideration of relative exposure to tort claims).

Reiterating that retained revenue opportunities at DCR may take a few years to reach their full potential under the new model, a simple analysis of fee changes illustrates the

prospective impact of small changes. Parking spots at the metropolitan beaches number approximately 4,000, as shown in Exhibit 11:

<p>Exhibit 11 – Metro Beaches Parking Spots Source: DCR, modified by RRLLP</p>
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Beach	Parking Spots
1. King’s Beach, Lynn	85
2. Nahant Beach, Nahant	600
3. Revere Beach, Revere	588
4. Short Beach, Revere	40
5. Winthrop Beach, Winthrop	251
6. Constitution Beach, East Boston	193
7. Pleasure Bay and Castle Island, South	490
8. L and M Street Beaches, South Boston	72
9. Carson Beach, South Boston	100
10,11. Malibu/Savin Hill Beaches, Dorchester	60
12. Tenean Beach, Dorchester	96
13. Wollaston Beach, Quincy	402
14. Nantasket Beach, Hull	998
Total	3,975

Presuming a one dollar increase at all sites, with 100% occupancy and only one daily turnover, seven days a week for the 62 days of peak months July and August, the potential increase in retained revenue is nearly \$250,000.

Capital Improvement Plans

DCR identifies approximately \$12.3 million in additional prospective beach-related capital projects that would round out the capital program and bring existing facilities into condition for optimal utilization.

Capital improvements completed between 2007 and 2012 were the cornerstone of the positive public sentiment regarding the condition of the metropolitan beaches, according to public feedback given during the MBC Hearings in 2013 and 2014. It is critical that, in the face of other DCR priorities in the near future, capital improvements continue as planned to protect and fully utilize the agency's assets and resources.

Recommendations

As a result of the research and analysis performed in the preparation of this report, Raphael and Raphael LLP made observations that are compiled below. It is hoped that MBC and DCR might incorporate these observations into their ongoing efforts to improve the metropolitan beaches and other resources statewide.

Retained revenue opportunities are not an offset, resulting in a reduced operating budget, but rather should augment the budget. If DCR proves to be effective at garnering retained revenue, a diminished operating budget would be demotivating. There should be a review of agreement terms in order to determine which parameters DCR has the authority to renegotiate on its own behalf. DCR is currently overburdened with the number of agreements that must be re-bid or renewed on a frequent schedule. The durations of certain leases may be reviewed, such that routine and low-risk agreements can be renewed (perhaps perpetual or automatic renewal up to a specified number of years), so that DCR can be relieved of the administration of routine agreements and thus keep its focus on the more high-risk, high-dollar, or more sensitive agreements.

IT improvements are critical for DCR's ability to administer the revenue potential of agreements and to the management reporting of revenue and expenses.

Emphasis on the overall health of DCR's operating budget is a powerful insight articulated by the MBC. This acknowledgement of DCR's entire system of operations allows metropolitan beaches to be maintained to beneficial levels without other resources suffering as a result. DCR's

mission unfolds on multiple platforms, which includes the balancing of seemingly opposing priorities – stewardship of the resources weighed against the usage patterns of the public, among others. Recognizing the complexity of resource management conveys a respect for non-beach resources and an understanding that the metropolitan beaches do not exist in a vacuum.

It is important to note the MBC uses the word programs to describe a set of public events and activities that bring people to the beach. These include sand sculpting competitions, concert series, family reading nights and beach festivals, which attract hundreds or in some cases hundreds of thousands of people to our regions public beaches. This is not the same as DCR's administrative definition of programs, which includes every event that requires a permit, from a family picnic to a high school field trip.

During interviews, DCR staff emphasized not only the need to further the capital work of the 2007-2012 period, but also the importance of garnering a sufficient operating budget to maintain the capital assets. The staff expressed concern over a past history of insufficient funding for maintenance of these assets, such that a pattern of enforced neglect was created, thus inevitably resulting in higher spending on capital enhancements in the long term. Routine maintenance is seen by DCR staff as an important budgetary item.

Based on our analysis and discussion with staff and leadership of the MBC, in order to achieve the goals of the MBC, RRLLP believes that the following actions are necessary:

- In 2015, move toward the all-in and the beaches funding numbers that are described above.

- Adequately fund the routine maintenance of capital assets in order to maximize the usefulness of capital expenditures.
- DCR should allocate additional dollars to programming.
- IT improvements and staff additions necessary for contract management and administration should be made to allow DCR an increased ability to administer agreements and perform management reporting of revenue and expenses.
- Retained revenue opportunities should be viewed as an augment to budget rather than as an offset.
- Similarly, to the extent that DCR's budget includes dedicated expenditures (earmarks), we recommend the budget be increased to meet them wherever possible.
- RLLP also recommends that the commission advocate for two items in the environmental bond bill that was recently reported favorably out of the Joint Committee on Environment, Natural Resources and Agriculture:
 - 2000-7064 for \$20 million to improve water quality on the metropolitan region's public beaches,
 - 2000-7065 for \$40 million to design, construct, restore or enhance infrastructure on those beaches as well.