Dunrae Gardens School’s
Schoolyard Naturalization Project
Proposal & Design
Prepared by Pietro Gasparrini
October 25, 2016
Table of Contents ......................................................................................................................................................... 2

1. Introduction & Overview ................................................................................................................................................ 4
2. Timeline & Community Consultation .............................................................................................................................. 5
3. Community Consultation ................................................................................................................................................ 6
4. Project Scope .................................................................................................................................................................... 7
   A. Schoolyard ..................................................................................................................................................................... 7
   B. Soccer Field ............................................................................................................................................................... 8
   C. Vehicular Circulation and Parking .............................................................................................................................. 8
5. Schoolyard Naturalization Project Design Proposal ........................................................................................................ 9
   A. Schoolyard ................................................................................................................................................................. 9
      La Forêt - Laurentian Forest ........................................................................................................................................ 10
      La Rivière – The St. Lawrence River .......................................................................................................................... 11
      La Montagne – The Appalachian Mountains ............................................................................................................. 11
      La Prairie - St. Lawrence Lowlands ........................................................................................................................... 11
      La Campagne – Dunrae’s Gardens ............................................................................................................................... 11
      Outdoor Classroom ..................................................................................................................................................... 15
      Dunrae’s Arboretum .................................................................................................................................................. 15
      Paved Play Area ......................................................................................................................................................... 16
      Perimeter Fence ....................................................................................................................................................... 16
   B. Soccer Field .................................................................................................................................................................. 17
   C. Vehicular Circulation and Parking .............................................................................................................................. 17
      School Parking Lot .................................................................................................................................................... 17
      Dedicated Drop-off Zones .......................................................................................................................................... 18
      Bike Racks ................................................................................................................................................................. 19
6. Schoolyard Naturalization Project Implementation & Prioritization ................................................................................ 19
   A. Phase 1 – Security & Safety ....................................................................................................................................... 20
   B. Phase 2 – Soccer Field ............................................................................................................................................. 21
   C. Phase 3 – La Campagne – Dunrae’s Gardens ............................................................................................................. 21
   D. Phase 4 – Schoolyard ................................................................................................................................................. 21
7. Cost .................................................................................................................................................................................. 22
   A. Estimated Cost .......................................................................................................................................................... 22
   B. Estimated Cost By Phases ........................................................................................................................................ 22
      Phase 1 - Security & Safety ....................................................................................................................................... 23
      Phase 2 - Soccer Field ............................................................................................................................................ 24
      Phase 3 - La Campagne – Dunrae’s Gardens ............................................................................................................... 24
      Phase 4 - Schoolyard ................................................................................................................................................ 26
   C. Grants ........................................................................................................................................................................ 27
      Soccer Field Beautification Grant - Ministère de l’Éducation et de l’Enseignement supérieur ......................................... 27
   D. Fundraising Campaigns ........................................................................................................................................ 28
      Green Fundraisers ...................................................................................................................................................... 28
      Plant A Tree Campaign ........................................................................................................................................... 28
      Donation Campaign ................................................................................................................................................. 29
   E. English Montreal School Board .................................................................................................................................. 29
8. Supporting Programs ....................................................................................................................................................... 29
   A. Bees .......................................................................................................................................................................... 30
   B. Trottibus ................................................................................................................................................................. 30
   C. Recycling & Composting .......................................................................................................................................... 31
9. Prioritization & Next Steps ............................................................................................................................................. 31
1. INTRODUCTION & OVERVIEW

In 2013, the Dunrae Gardens school community began discussions on how to improve the safety and security of the students while on the school grounds. The scope of the discussions were expanded to include how to enhance the learning and social experience of the students by better integrating the school grounds and extending the classroom to the outdoors. Traditionally, the exterior to the school is a space for recreational activities, leisure time and physical education. The role of the modern day schoolyard has undergone a major shift. Schoolyards now have vegetable gardens, fruits trees and edible landscaping, beehives, naturalized environments and outdoor classrooms.

Researchers have looked at how outdoor environments can improve learning. One study evaluated the impact of gardening and noted that gardening enhanced appreciation of the natural environment and science education (Rahm, 2002). Brink and Yost’s 2004 study noted that improvements made to the school grounds, along with the implementation of a pedagogical program focused on outdoor learning, led to “reduced safety and disciplinary problem, improved student behavior, increased use of outdoor learning curricula, improved student attitudes towards school, increased readiness to learn, and increased parental involvement” (Brink and Yost, 2004). Adding natural areas and varied outdoor settings to schoolyards have also resulted in an increase in student’s physical activity (Brink et al., 2010; Boldermann et al., 2011).

Sharon Gamson Danks, author of “Asphalt to Ecosystems: Design Ideas for Schoolyard Transformation” described the movement to green school grounds as a way to “bring nature back to cities and suburbs by transforming barren asphalt and ordinary grass into vibrant environments for learning and play, set within the context of the rich, local ecosystems that nurture wildlife and the natural processes that underlie and sustain our urban infrastructure. Green schoolyards foster children’s social, physical, and intellectual growth and health by providing settings for curiosity, collaboration, imagination, exploration, adventure, and wonder” (Gamson Danks, 2010).

In November 2013, the Governing Board established the Exterior Master Plan Sub-Committee with the mandate to oversee the development of a master plan for the exterior of the school. Renamed the Schoolyard Naturalization Project Committee in 2015, the committee’s mandate is to plan and develop the Schoolyard Naturalization Project.
The Schoolyard Naturalization Project is a comprehensive project that includes the following objectives:
- Improving the safety and security of the students on school property, including when arriving and departing school;
- Integrating naturalized environments on the school grounds for children’s play, exploration and discovery
- Improving pedestrian and vehicular circulation around school property; and
- Enhancing the learning and social experience of Dunrae students by increasing the use of the outdoor space and extending the classroom to include all the school grounds.

This proposal is the result of three years of work of the various school community stakeholders. It presents a series of ideas and suggestions that can both enhance the safety and security of our student and transform the school grounds into an enriching learning environment. This proposal showcases the possibilities. A holistic approach was taken in the design in order to demonstrate how the various ideas together can create a truly unique experience for the students. Due to the magnitude of the proposal and design, each element is presented separately and then the elements are grouped together into 4 phases: Safety & Security, Soccer Field, La Campagne – Dunrae’s Gardens and Schoolyard Thematic Areas.

The decisions as to which elements are implemented will require the support and approval of the school (administration, teachers, Governing Board and parents) and the school board. Some of the elements will also require approval by the Town of Mont-Royal.

This proposal was presented to the Governing Board on September 7, 2016. The Governing Board voted to prioritize the implementation of Phase 1 Safety & Security and Phase 2 Soccer Field.

2. TIMELINE & COMMUNITY CONSULTATION

The following timeline lists milestone events in the development of the Schoolyard Naturalization Project:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 11, 2013</td>
<td>Governing Board established the Exterior Master Plan Sub-Committee</td>
</tr>
<tr>
<td>November 11, 2013</td>
<td>Eileen Stack’s (Parent) presentation to Governing Board as to why the installation of a fence for the K-Cycle 1 schoolyard is required.</td>
</tr>
<tr>
<td>December 3, 2013</td>
<td>Marc Beliveau’s (Parent) presentation to Governing Board as to why the installation of a fence for the K-Cycle 1 schoolyard is not required.</td>
</tr>
<tr>
<td>January 7, 2014</td>
<td>Marcus Lobb, B.A.S.E Green Initiative Advisor, EMSB, presentation to Exterior Master Plan Sub-Committee on educational gardens and outdoor classrooms</td>
</tr>
<tr>
<td>January 7, 2014</td>
<td>Presentation by Vélo Québec to Exterior Master Plan Sub-Committee on new initiatives by Vélo Québec to increase cycling as a means of sustainable transportation</td>
</tr>
<tr>
<td>Date</td>
<td>Event/Activity</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>January 14, 2014</td>
<td>Governing Board adopts Exterior Master Plan Sub-Committee’s recommendations for changes to vehicular traffic flow and signage and parking. Recommendations submitted to the Service de Police de la Ville de Montréal.</td>
</tr>
<tr>
<td>February 25, 2014</td>
<td>Principal &amp; Governing Board Chair met with Ms. Bonnie Hill, Director of the Urban Planning and Inspection Department for the Town of Mount Royal on Tuesday</td>
</tr>
<tr>
<td>March 17, 2015</td>
<td>Parent and student Schoolyard Naturalization Project Survey approved by Governing Board</td>
</tr>
<tr>
<td>April 28, 2015</td>
<td>Staff Schoolyard Naturalization Project Survey approved by Governing Board</td>
</tr>
<tr>
<td>March &amp; April 2015</td>
<td>Schoolyard Naturalization Project Surveys distributed to school community</td>
</tr>
<tr>
<td>September 15, 2015</td>
<td>Schoolyard Naturalization Project Survey Report presented to the Governing Board</td>
</tr>
<tr>
<td>January 20, 2015</td>
<td>Dunrae Garden’s Home &amp; School Association commit $4000.00 in funding for designs of the school grounds by landscape architect</td>
</tr>
<tr>
<td>June 2015</td>
<td>The Schoolyard Naturalization Project Committee conducts a Request For Proposal for professional services for the design of the school grounds</td>
</tr>
<tr>
<td>December 2015</td>
<td>Studio CAPT is selected and hired as landscape architect</td>
</tr>
<tr>
<td>January 12, 2016</td>
<td>Studio CAPT presentation of design (version 1) to the Governing Board and Town of Mont-Royal representatives</td>
</tr>
<tr>
<td>May 10, 2016</td>
<td>Studio CAPT submitted Version 2 of design</td>
</tr>
<tr>
<td>May 20, 2016</td>
<td>Schoolyard Naturalization Project Committee meeting to review version 2 of the design</td>
</tr>
<tr>
<td>June 15, 2016</td>
<td>Principal &amp; Governing Board Chair met with Town of Mont Royal Representatives</td>
</tr>
<tr>
<td>August 2016</td>
<td>Studio CAPT submitted final version of design (Appendix A: Schoolyard Naturalization Project Design Proposal)</td>
</tr>
<tr>
<td>September 7, 2016</td>
<td>Governing Board approves Phases 1 &amp; 2 of the Schoolyard Naturalization Project Proposal &amp; Design</td>
</tr>
</tbody>
</table>

### 3. COMMUNITY CONSULTATION

Community consultation is integral to the success of this project.

In 2013, the Governing Board heard from parents regarding the installation of a perimeter fence for the K-Cycle 1 section of the current schoolyard.

In the spring of 2015, parents/guardians, teacher, staff, administration and students were surveyed to allow all stakeholders an opportunity to provide their opinion and suggestions on how we can enhance the learning and social experience by redeveloping the school grounds, all the while address safety and security concerns.
Three different surveys were developed and distributed: a parent/guardian survey, a staff survey and a student survey (Cycles 2 & 3). The 2015 Schoolyard Naturalization Project Survey Report was submitted to the Governing Board in September 2015 and contains aggregate results based from the information gathered from the surveys. The survey report was provided to the landscape architect.

See Appendix B: 2015 Schoolyard Naturalization Project Survey Report

The Schoolyard Naturalization Project Proposal & Design will be presented to the school community.

4. PROJECT SCOPE

The scope of the project can be divided into 3 distinct physical areas:
- Schoolyard
- Soccer field
- Vehicular circulation and parking

A. SCHOOLYARD

Currently, the schoolyard is considered as all the paved area and green space on school property, with the exception of the parking lot, the green space located between the Dumfries Road side of the building and Dumfries Road and the green space between the paved schoolyard and the sidewalk between Dumfries Road and Appin Avenue (See Appendix C: Existing Schoolyard Layout)

For this Schoolyard Naturalization Project, the schoolyard was considered as all paved area and green space on school property, with the exception of the parking lot, the soccer field and the green space located between the Dumfries Road side of the building and Dumfries Road schoolyard (See Appendix B: Existing Schoolyard Layout)
According to cadastral drawings of the school property, the original school building main entrance, located on Dumfries Road is the official entrance to the school. As such, municipal zoning by-laws impose restrictions on the utilization of the green space between the Dumfries Road side of the building and Dumfries Road. For this reason, this section of property was not included as part of the project. It will be maintained as greenspace.

B. SOCCER FIELD

The soccer field is a vast green space that is currently underutilized, due to the state of the field and water drainage issues. It is considered as part of the schoolyard, however as noted above, for this project the soccer field is considered as a distinct physical area.

The soccer field was the recipient of a beautification grant offered by the Ministère de l’Éducation et de l’Enseignement supérieur (MELS) several years ago. This funding has not yet been used and is currently available. The soccer field beautification grant is a three-way partnership grant – the EMSB and MELS are confirmed partners, with each providing funding up to $25,000. A third partner has not been confirmed.

The Town of Mont Royal (TMR) is a prospective third partner for the soccer field beautification. The Schoolyard Naturalization Committee and the school administration have been working closely with TMR on the soccer field design. In order to establish a partnership with TMR, the soccer field must meet provincial and Fédération de soccer du Québec field design requirements (Gionet, 2005).

The School Administration will present TMR with the proposed soccer field design in hopes to initiate formal discussions on a potential partnership for the soccer field beautification grant.

C. VEHICULAR CIRCULATION AND PARKING

Traffic circulation and pedestrian movement around the school prior to the commencement of school and after school have been a preoccupation of many parents and teachers. Unfortunately, the school administration has never received a response regarding the traffic circulation proposal submitted in 2014 to the Service de Police de la Ville de Montréal.
In 2015, TMR informed the school administration that any changes to current traffic and parking restrictions could be requested directly to the City Manager.

In an effort to address safety concerns and improve vehicular circulation and parking, changes to street signage and the parking lot have been incorporated in the proposed design.

A formal request will have to be made to TMR to change street traffic and parking restrictions.

5. SCHOOLYARD NATURALIZATION PROJECT DESIGN PROPOSAL

The schoolyard naturalization project design proposal is group together under the same heading as indicated above in the scope section:
- Schoolyard
- Soccer field
- Vehicular circulation and parking

In each section, a series of suggested elements are presented in detail.

See Appendix A: Schoolyard Naturalization Project Proposal & Design

A. SCHOOLYARD

The schoolyard design is based on the introduction of five thematic natural environment areas:
- La forêt - The Laurentian Forest
- La rivière - The St. Lawrence River
- La montage - The Appalachian Mountains
- La prairie - The St. Lawrence Lowlands
- La campagne - Dunrae’s Vegetable and Flower Gardens

Quebec’s topographical terms were purposely integrated into the names of the thematic areas to enhance the learning impact. Each thematic area is distinguished by landscaping elements associated with those natural environments and includes a walking path to encourage exploration. The proposed design would be beneficial for students, providing space for real-life observation.

Other elements included in the schoolyard design are:
- An outdoor classroom
- Arboretum
- Paved play area
- Perimeter fence
Outdoor learning is not only limited to the physical outdoor classroom space. A significant amount of research has examined the potential benefits of outdoor learning and overall impact of these research studies is impressive. This research has shown that children’s social, psychological, academic and physical health is positively impacted when they have daily contact with nature. According to Children & Nature Network (www.childrenandnature.org/), the positive impacts of naturalized outdoor learning environments include:

- Supporting creativity and problem solving
- Enhancing cognitive abilities
- Improving nutrition
- Improving academic performance.
- Reducing Attention Deficit Disorder symptoms
- Improving eyesight.
- Improving social relations
- Improving self-discipline.
- Reducing stress.
- Increasing physical activity
- Increasing motivation
- Better attitudes about the environment
- Better behaviour
- Enhancing communication skills


In the proposed design, the overall schoolyard size has increased. Currently the schoolyard is 31,587 square feet (2935 square meters), whereas the proposed design has 43,437 square feet (4035 square meters) – a 24% increase. The students would have access to more of the school property than they currently do, partly thanks to the installation of a new perimeter fence which will allow students to freely roam the whole enclosed schoolyard.

Potential school-wide or grade-specific activities include the creation of information boards or displays on the thematic areas (geography and science).

Below are descriptions of each thematic area and other potential elements that can be incorporated into the schoolyard.

An attempt was made to include as much detail as possible in this proposal. Once the decision is made to implement an element, the development of construction plans would be required. Such plans would include planting lists for tree and other vegetation.

**LA FORÊT - LAURENTIAN FOREST**

The La forêt – The Laurentian Forest area would consist of an asphalted area and greenspace. The greenspace would be landscaped to incorporate native hardwood trees (e.g., sugar maple and white birch), conifers (e.g., firs and white spruce), and other native shrubs and plants that occurring naturally in the Laurentian forest. The area would also include a coloured path and boulders. In the proposal, the La forêt area is 56,204 square feet (5221 square meters) and located in the front of the school (south corner of the schoolyard).
LA RIVIERE – THE ST. LAWRENCE RIVER

The La rivière - The St. Lawrence River area would be an area consisting of greenspace and the outdoor classroom. The greenspace would be landscaped to incorporate vegetation found along the St. Lawrence River and characteristic of the transition areas between marine and land habitats. Blue painted asphalt or other blue materials could be used to accentuate the river and water theme – both the path and/or portions of the outdoor classroom could be painted. In the proposal, the La rivière area is 4216 square feet (391 square meters) and is located in the back of the school, along the property boundary with Mohawk Park and the soccer field.

LA MONTAGNE – THE APPALACHIAN MOUNTAINS

The La montage - The Appalachian Mountains area would be the largest thematic area and consists of an asphalted area and greenspace. The greenspace would be landscaped to incorporate vegetation found in both the Appalachian Mountains, as well as the northern forests - mainly conifers. The area would have a higher concentration of boulders and would take advantage of existing changes in elevation of the land. In the proposal, the La montage area is 104,466 square feet (9705 square meters) and is located in the front of the school along Dunrae Avenue.

LA PRAIRIE - ST. LAWRENCE LOWLANDS

The La prairie – The St. Lawrence Lowlands area would be the smallest thematic area and consists of a green band along the proposed fence between the school property and Mohawk Park. The area would incorporate vegetation found in grasslands, with some trees. Although the St. Lawrence Lowlands is the main agricultural area of Quebec, the vegetable garden is located in the La campagne thematic area. In the proposal, the La prairie area is 1599 square feet (148 square meters).

LA CAMPAGNE – DUNRAE’S GARDENS

The La campagne – Dunrae’s Vegetable and Flower Gardens thematic area would be located in the front of the school (eastern corner of the schoolyard). In the proposal, the La campagne are is 2275 square feet (211 square meters).

The La campagne – Dunrae’s Vegetable and Flower Gardens area would not be a single garden, but would be composed of several elements:
- A butterfly/pollinators garden;
- Vegetable garden; and
- Fruit trees and edible shrubs.

Details on each element are presented below.
Although not indicated in the design, consideration should be given to installing include a small fence to separate the La campagne area from the schoolyard, however without a gate. Unrestricted access to the

“To plant a garden is to believe in the future.”
Audrey Hepburn
garden during recess would be essential to allow students the opportunity to explore the area, however protecting the garden from stray balls is also important.

**BUTTERFLY & POLLINATOR’S GARDEN**

A butterfly and pollinator’s garden could be created using carefully selected native flowering shrubs and plants (e.g. milkweed). This garden would create a space in the schoolyard where students could learn about native pollinators and their habitat needs and can help preserve struggling local bee and butterfly populations. This garden has the potential to instill a feeling of pride in their environmental stewardship.

The butterfly and pollinators garden would be planted at ground level along the perimeter fence. Once planted, the garden could become certified as a *Jardin pour la biodiversité* by the *Jardin Botanique de Montréal*.

Potential school-wide or grade-specific activities include the annual Got Milkweed campaign (David Suzuki Foundation) and the Monarchs Without Borders campaign (Montréal Insectarium), both of which support the conservation of the monarch butterflies. The Butterfly and Pollinator’s Garden could also play an important role in the maintenance of the school’s bee colony (See Supporting Programs – Bees).

The potential learning activities based in the butterfly and pollinators garden are primarily science based (e.g., butterfly lifecycle, anatomy of a flower, pollination), however other subjects can benefit from this gardens as well. See Appendix D: Pedagogical Resources for additional information on learning activities for the Butterfly & Pollinator’s Garden.

**VEGETABLE GARDEN**

School vegetable gardens are a wonderful way to reconnect students with the natural world and the true source of their food, and teach valuable gardening and agriculture concepts and skills that integrate with several subjects, such as math, science, art, health and physical education, and social studies, as well as several educational goals, including personal and social responsibility.

Dunrae Gardens, as an urban school, has an opportunity to get involved with the urban agriculture movement beyond simply planting a school garden. The benefits of a urban agriculture go beyond reducing greenhouse gas emissions. A 2016 study from the U.S. Johns Hopkins Center for a Livable Future found that urban agriculture could “increase social capital, community well-being, and civic engagement with the food system,” as well as enhance food security, provide ecosystem services, improve health and build residents’ skills (Santos, 2016). Peter Ladner, author of *The Urban Food*
*Revolution: Changing the Way We Feed Cities* writes that “When urban agriculture flourishes, our children are healthier and smarter about what they eat, fewer people are hungry, more local jobs are created, local economies are stronger, our neighborhoods are greener and safer, and our communities are more inclusive.” (Ladner, 2011).

In the proposed design, the area allocated for the *La Campagne* is enough space for up to 20 raised bed garden plots (4 feet by 8 feet) with 4 feet in between in plot.

The challenge is not in building the raised bed garden plots, but with the planning and maintenance. As well, imperative to the success of the garden area is the support of the teachers and proving them with support to engage in curriculum activities in the garden. Aside from curriculum-based activities, having organized activities around the planting and harvesting of the garden is also important (e.g., green or garden club, afterschool extra-curricular activity).

Three planning and maintenance scenarios for the vegetable garden were considered and are detailed below. The decision as to which scenario is best for Dunrae Gardens is one that must be taken with the input and support of the teaching staff. Although the temptation to build 20 raised bed garden plots is present, in order to be a truly sustainable area, careful consideration must be given as to who will use the vegetable garden and how often. This element requires additional consideration given the work involved in maintaining a productive and viable vegetable garden. The scenarios presented specifically look at the following logistical considerations: initial set-up/building, organized planting and/or harvesting workshops and summer maintenance.

**Scenario One – Two Short Growing Period**

In Scenario One, there are two short growing seasons. In the spring, spring vegetables would be planted and then harvested prior to the end of the school year. The garden is closed for the summer. At the end of August, the garden would be planted with vegetables that require a short growing period (e.g. salad). This scenario alleviates the need to water and tend to the vegetable garden during July and most of August when the school is closed; reducing the annual cost of maintaining the vegetable garden. However, this scenario does not maximize the potential of having a vegetable garden.

**Scenario Two – Full Garden Maintained by the School**

In Scenario Two, there would be a mix of spring and fall vegetables planted. The spring vegetables would be harvested prior to the end of the school year and the fall vegetables would be harvested after the students return to school. This scenario requires that the school organize for a company and/or volunteers to come to the school during July and most of August to water and maintain the vegetable garden.
garden. If volunteers are not found, an outside company is required and this would increases the annual cost of maintaining the garden.

**Scenario Three – Full Garden with Community Partner**

In Scenario Three, the school would partner with a community organization working in the area of urban agriculture, collective gardening and/or food security. In addition to installing the desired number of raised bed garden plots required for the school's activities, additional raised bed garden plots would be built for the exclusive use of a community partner. The partnership between the community organization and the school would be an exchange of gardening infrastructure and space for maintenance services.

For example, the school could partner with a not for profit community organization like La Place Commune. La Place Commune is a solidarity coop located in Park Extension whose mission it is to “participate to the socioeconomical and communitarian development of the neighbourhood Parc Extension in Montreal through an ensemble of activities linked to food and agriculture.” ([http://laplacecommune.com/](http://laplacecommune.com/)). The food production initiatives of La Place Commune aim to make healthy, local and organic produce affordable to the residents of Parc Extension, an area of Montreal with a moderate to high concentration of underprivileged (Comité de gestion de la taxe scolaire de l’île de Montréal, 2013). La Place Commune has expressed interest in forming a partnership with Dunrae Gardens.

Scenario Three would be the most interesting scenario since a partnership would help offset the recurring expenses of maintaining the vegetable garden during the summer season. This scenario would also have the added benefit of exposing students to the issues of food security and teaching them to help their fellow neighbour.

During the evaluation process, it was strongly suggested that the garden area be fenced in order to avoid damage to the plants. One option would be to reuse a portion of the current fence that surrounds the soccer field. However, it is important to balance the need to protect the garden from stray balls with open access to the garden during recess in order to allow students the opportunity to explore. The fence therefore does not require a gate, but an open entrance.

In order to provide details as to the estimated cost of each of the scenarios, companies/organizations specialized in urban agriculture were contacted to provide quotes (see Appendix E). These are presented for information purposes.

**FRUIT TREES AND EDIBLE SHRUBS**

To complement the butterfly and pollinator’s garden and vegetable garden, the area could also contain an assortment of perennial and edible plants that would require minimum maintenance and fruit trees.
VEGETABLE GARDEN PLANNING AND PROGRAMMING

As stated, the programing of this area is important and the most challenging to organize. Input and engagement from the teachers is critical.

There are many companies and organizations involved in urban agriculture that offer garden planting workshops and activities. Such activities could potentially be incorporate into the curriculum or could also be organized as school-wide activities. Another possibility is to have grade or cycle specific garden workshops. Appendix E contains information on the cost of workshops proposed by the companies/organizations contacted.

The B.A.S.E. Daycare’s Green Club could be involved by growing seedlings and the school could explore the possibility of developing, in partnership with an urban agriculture, an Extra-Curricular Activity centered on urban agriculture and the garden.

OUTDOOR CLASSROOM

In the proposed design, the outdoor classroom is located in the La rivière - The St. Lawrence River thematic area and would consist of two rows of seating for approximately 60 students arranged in an amphitheatre design. The outdoor classroom would be a physical learning space where teachers can teach, lecture style, to the students.

As stated earlier, the intent of the Schoolyard Naturalization Project is that outdoor learning is not limited to the outdoor classroom space, but is the entirety of the schoolyard. The dedicated outdoor classroom space is intended to support outdoor learning, when teachers wish to address the students in a classroom type setting.

DUNRAE’S ARBORETUM

An arboretum is a place where trees and shrubs are cultivated for scientific and educational purposes. The proposed design calls for the planting of 62 new trees. The arboretum is not a defined physical area within the schoolyard, but encompasses the whole property.

By planting a diverse number of native trees and conifers and by properly identify each species; the school property would become home to an arboretum. The presence of a wide diversity of trees and conifers represents a potential learning opportunity.

Potential projects include the student’s creating a Dunrae Garden’s Arboretum Guide – a bilingual reference book that has fact sheets on each tree planted on the property. Fact
sheets could include information like: name, description, uses, habitat and distribution.

See Appendix F: Arboretum Tree List

**PAVED PLAY AREA**

In the proposed design, portions of existing asphalt would be replaced with greenspaces. However, given that the proposed mini-soccer fields would have a smaller footprint than the existing soccer field, the paved play area east of the building would increase significantly (by 12 meters). The introduction of thematic naturalized areas would not significantly reduce the asphalted area. Currently there is 24,545 square feet (2271 square meters) of the schoolyard that is asphalted, whereas the proposed design there would be 23,871 square feet (2217 square meters). The proposed design has slightly less paved area (2% less), however overall more schoolyard.

The paved play area would also incorporate:
- Pavement games (existing pavement games may require repainting)
- Basketball nets (existing)

**PERIMETER FENCE**

The proposed design calls for the installation of a perimeter fence around the schoolyard and soccer field. The primary entrance point into the schoolyard would be located on Dunrae Avenue, facing the school’s main entrance. A secondary entrance point would be located at the rear of the school building from the school’s parking lot. A third entrance point would be along the fence bordering Mohawk Park, however this entrance would remain locked and would only be unlocked by the school in order to facilitate access to Mohawk Park during school activities, including physical education classes.

The proposed perimeter fence is 4 feet high, with the exception of the fence around the soccer field which is purposely set at 10 feet high in order to prevent balls from going beyond the property.

The installation of a perimeter fence will address safety and security concerns of both the school administration and some parents. Presently, due to the open nature of the schoolyard, individuals are free to cross the school’s property during the day. This proves to be a challenge when trying to ensure the safety of the students during before and after school and during recess.

In addition to the enhanced safety, the installation of a perimeter fence will provide student with access to more of the school property than they currently do. As well, schoolyard supervision can be geared more to the students and less to watching for unauthorized individuals who access the property.

With regards to the material used for the proposed fencing, two different materials are recommended. For the 10 foot fence surrounding the soccer field and the 4 foot fence along the rear of the school and parking lot, the most economical and practical solution is a standard chain linked fence. However, for the front of the school, a more aesthetically pleasing material is suggested. See Appendix I: Perimeter Fencing Options for additional details.
Consideration should also be given to increasing the height of the perimeter fence along the back of the school (fence bordering Mohawk Park) from four feet to ten feet. In the schoolyard area in the back of the school, there are basketball nets and students often play with balls in this area. Once a perimeter fence is installed, it will be more complicated for students to retrieve balls that have gone off school property.

B. SOCCER FIELD

Currently the soccer field area is 65,867 square feet (6119 square meters) and it is laid out as a single adult sized soccer field. There is no advantage or necessity for an elementary school to maintain a single, adult sized soccer field.

The proposed design incorporates 2 mini-soccer fields for 7 on an area that is smaller than the existing field area. Two smaller fields would be better suited to the needs of the school’s physical education program and to the aptitude of the students. The proposed design covers 53,621 square feet (4948 square meters). As a result, the area no longer required for the soccer field (12,246 square feet or 1171 square meters) would be converted to schoolyard.

The dimensions of the mini-soccer fields, including clearances, are as recommended by the Fédération de soccer du Québec (Gionet, 2005). By ensuring that the min-soccer fields are designed according to Fédération de soccer du Québec’s requirements, TMR Sports and Recreation will be motivated to partner with the school in the beautification grant offered by the Ministère de l’Éducation et de l’Enseignement supérieur (MELS).

C. VEHICULAR CIRCULATION AND PARKING

According to the 2015 Schoolyard Naturalization Project Survey Report parents are dissatisfied with parking and student drop-off and pick-up. The Schoolyard Naturalization Project offers an opportunity to make improvements.

SCHOOL PARKING LOT

According to the 2015 Schoolyard Naturalization Project Survey Report, 36.5% of staff respondents and 34% of parent respondents indicated that parking was inadequate.

Currently, the school’s parking lot is awkwardly shaped, with space for approximately 15 cars. This parking lot is for school staff and teachers. The manner in which the parking lot is currently configured makes the collection
of garbage problematic, specifically garbage truck access.

In the proposed design, the school’s parking lot would accommodate up to 16 vehicles, with unobstructed access to the garbage containers. The perimeter fence would also outline the parking lot. The proposed design also improves access and circulation around the school’s rear entrance.

With respect to parent’s parking concerns, only street parking is available. Due to the narrow streets, parking is often limited to only one side of the street as per municipal regulations. No solutions are available.

DEDICATED DROP-OFF ZONES

SCHOOL BUS DROP-OFF & PICK-UP ZONE

Currently, the school bus drop-off and pick-up zone is along Dunrae Avenue, between Appin Avenue and Dumfries Road. This portion of Dunrae Avenue is closed to traffic Mondays to Fridays from 8:45 AM to 9:30 AM and from 3:00 PM to 6:00 PM.

According to the 2015 Schoolyard Naturalization Project Survey Report, 13% of parent respondents indicated that the school bus drop-off and pick-up zone was not well situated and not well identified. Staff surveyed indicated overwhelmingly (90%) that the school bus drop-off and pick-up zone was well situated and well identified. The difference in response can be attributed to the perspective of the respondent.

One reoccurring issue that parents and student do not cross Dunrae Avenue at the street’s intersections, but between the intersections. This results in parents and students often crossing between parked school buses; this practice is not permitted and is unsafe. However, given that this is a behavioural issue, it cannot be addressed with any physical modifications to the area.

Another issue with the current school bus drop-off and pick-up zone is sidewalk crowding. Given parents are instructed to remain off the grass in order to facilitate the monitoring of children as they disembark from school buses and enter the schoolyard, they are forced to remain on the sidewalk. Many congregate near the double-gate entrance/driveway (asphalted area). Increasing the width of the sidewalk of the school bus drop-off and pick-up zone along Dunrae Avenue may alleviate this issue. The proposal includes widening the sidewalk in the school bus drop-off and pick-up zone from 1.5 meters wide to 3.5 meters wide. Since the proposed design includes a perimeter fence, that will result in a clearer delimitation between schoolyard and public property, any crowding on the sidewalk will be able to spillover onto the grass along the school bus drop-off and pick-up zone (public property) without having parents standing in the schoolyard. There is a possibility that the sidewalk crowding issue may be resolved by the installation of the perimeter fence.

Given that widening of the sidewalk is a municipal issue, once this proposal is approved, a request will be submitted to TMR to widen the sidewalk the next time the sidewalk will be repaired or rebuilt.

In addition, the proposal includes a modification of the traffic restrictions on Dunrae Avenue, between Appin Avenue and Dumfries Road to being closed to traffic Mondays to Fridays from 8:45 AM to 9:30
AM and from 3:00 PM to 5:00 PM. However, this modification would be coupled with the addition of parking being permitted for a maximum of 15 minutes from 5:00 PM to 6:00 PM (see Student Drop-Off & Pick-Up Zone for more details).

**STUDENT DROP-OFF & PICK-UP ZONE**

The school does not currently have a dedicated student drop-off and pick-up zone. Parents who drive their children to school will drop their children off either along Dumfries Road (east side), along Dunrae Avenue (north or south side between Appin Avenue and Rockland Road), long Appin Avenue (north or south side), in the school’s parking lot or Mohawk Park’s parking lot. Currently, many parents contravene parking and stopping restrictions. Along Dunrae Avenue, between Appin Avenue and Rockland Road, there is no stopping permitted on north side of the street (school property side) and along Appin Avenue, between Dunrae Avenue and Dumfries Road there is no stopping permitted on the north side of the street (park side).

According to the 2015 Schoolyard Naturalization Project Survey Report (See Appendix B), 21% of parent respondents and 13% of staff respondents indicated that student drop-off and pick-up was inconvenient.

The proposed design includes a dedicated student drop-off and pick-up zone along the north side of Dunrae Avenue (school property side), between Appin Avenue and Rockland Road between the hours of 7:00 AM to 9:30 AM and 3:30 PM and 6:00 PM. Parking would be permitted during these periods for 15 minutes on school days. However, in order to implement this change, parking must be restricted on the south side of Dunrae Avenue during the same periods.

As indicated above, 15 minute parking would also be permitted in the school bus drop-off and pick-up zone from 5:00 PM to 6:00 PM.

A formal request will have to be made to TMR to change street traffic and parking restrictions.

**BIKE RACKS**

In order to promote sustainable transportation and for security reasons, it is proposed that the bike racks be relocated to a more visible area in the front of the school (along Dunrae Avenue).

6. **SCHOOLYARD NATURALIZATION PROJECT IMPLEMENTATION & PRIORITIZATION**

Due to the magnitude of the project, a phased in approach is proposed for implementation. In order to minimize costs, the preparation of construction plans for execution could be completed for the whole project and the actual construction phased in.

The following are the proposed phases:
- Phase 1: Security & Safety
- Phase 2: Soccer Field
Phase 3: Garden
Phase 4: Schoolyard

Please note that the implementation phases are not identical to the headings used in the design proposal Schoolyard, Soccer field and Vehicular circulation and parking. The schoolyard naturalization project design proposal elements were group together as per the physical space, whereas the determination of the phases took into consideration the objectives of the Schoolyard Naturalization Project; implementation logistics and planning; and funding opportunities.

- Improving the safety and security of the students on school property, including when arriving and departing school;
- Integrating naturalized environments on the school grounds for children’s play, exploration and discovery
- Improving pedestrian and vehicular circulation around school property; and
- Enhancing the learning and social experience of Dunrae students by increasing the use of the outdoor space and extending the classroom to include all the school grounds.

A. PHASE 1 – SECURITY & SAFETY

One of the principal objectives of the Schoolyard Naturalization Project is to improve the safety and security of the students on school property, including when arriving and departing school. For this reason, Phase 1 encompasses the proposed design elements related to security and safety, specifically:
- Perimeter Fence (excluding the soccer field)
- School Parking Lot
- Dedicated Drop-off Zones

The school parking lot was included in Phase 1 due to the fact that the perimeter fence will affect the dimensions and layout of the parking lot.

Implementation of the dedicated drop-off zones is dependent on TMR approving and implementing the proposed changes.

See Appendix G: Schoolyard Naturalization Project Phase 1

Although the design (Appendix A) indicates a 4 feet high perimeter fence, with the exception of the fence around the soccer field which was set at 10 feet high, the Phase 1 design as illustrated in Appendix G proposes the following:
- 4 feet high fence in front of the school (Dunrae Avenue) until the emergency vehicle driveway;
- 6 feet high fence along the property line from the emergency vehicle driveway to beginning of the soccer field;
- 10 feet high fence around on the 3 sides of the soccer field;
- 6 feet high fence in the back of the school (along Mohawk Park border) from the soccer field until the back entrance; and
- 4 feet high fence for the remaining sections around the parking lot.
B. PHASE 2 – SOCCER FIELD

Phase 2 would be the soccer field, as presented in the design proposal. Given that the soccer field has an existing beautification grant that has not yet been used and that this grant is dependent on finding a third partner, it is best to maintain the soccer field as a separate phase.

See Appendix H: Schoolyard Naturalization Project Phase 2

C. PHASE 3 – LA CAMPAGNE – DUNRAE’S GARDENS

The objectives of the Schoolyard Naturalization Project include integrating naturalized environments on the school grounds and increasing the use of the outdoor space. Phases 3 and 4 together incorporate all the remaining proposed design elements.

Due to the popularity of school gardens and urban apiculture, there are several grants available for building school gardens and installing beehives. As well, the location of the proposed La Campagne thematic area is such that it would be possible to execute it separately from the other thematic areas.

For these reasons, Phase 3 encompasses the La Campagne – Dunrae’s Vegetable and Flower Garden, which includes the Butterfly and Pollinator’s Garden; the Vegetable Garden; and Fruit Trees and Edible Shrubs.

To complement the gardens, the installation of a beehive is included in Phase 3 (see Supporting Program – Bees).

D. PHASE 4 – SCHOOLYARD

Phase 4 includes all the remaining proposed elements, including:

- The following thematic natural environment areas: La forêt - The Laurentian Forest, La rivière - The St. Lawrence River, La montage - The Appalachian Mountains, and La prairie - The St. Lawrence Lowlands
- The Outdoor classroom
- Dunrae’s Arboretum
- Paved Play Area

Although grouped together in Phase 4, some of these elements, could be implements as funding is made available. Due to the popularity of outdoor classrooms and schoolyard naturalizations, there are grants available for the building of the outdoor classroom and for the arboretum which can impact any decision on if and when to implement these elements.
If it is decided that some elements will be implemented, consideration should be given to the impact on the paved play area. Although the overall design slightly reduces the paved area, if a stepped approach is used for some of the Phase 4 elements, the amount of paved area may be reduced temporarily.

7. COST

A. ESTIMATED COST

The estimated total cost of the proposed design, as estimated by the landscape architect is $268,362.

This estimate is based on the following material selections:

- Chain linked perimeter fencing
- Outdoor classroom made of boulders
- Seating provided in the form of boulders (not benches)
- Crushed gravel for path in the thematic areas
- Planting only large trees

The estimated cost does excludes soccer nets, drawing field lines, vegetable garden’s raised garden beds and associated costs.

Additional costs of this proposal would include:

- Increasing the height of the perimeter fence in the back of the school from four feet to 10 feet;
- Installing a non-chain link fence in the front of the building (See Appendix I)
- Installation of the bee hive (See Appendix J), however excluding minor modifications required to facilitate roof access
- Installation of the vegetable garden’s raised garden beds (See Appendix E)

B. ESTIMATED COST BY PHASES

The following table indicated the estimated cost of the proposed phases for the project. Details are provided below.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Component</th>
<th>Estimate Cost (before taxes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Security &amp; Safety</td>
<td>$31,112 (option 3)</td>
</tr>
<tr>
<td>2</td>
<td>Soccer Field</td>
<td>$53,976</td>
</tr>
<tr>
<td>3</td>
<td>La Campagne – Dunrae’s Gardens</td>
<td>$16,338 (Scenario Three, Coop Bioma)</td>
</tr>
<tr>
<td>4</td>
<td>Schoolyard</td>
<td>$202,459</td>
</tr>
</tbody>
</table>
**PHASE 1 - SECURITY & SAFETY**

The Phase 1 costs involve mainly the purchase and installation of the perimeter fencing, with the exception of the fencing for the soccer field.

The current design has four foot high fencing along the rear of the school and chain link fencing in the front of the school. Given the various options discussed, three estimates are provided below:

**Option 1**
As proposed by the landscape architect - 4 foot high chain link fence.
Estimated cost: $11,972

**Option 2**
4 foot high chain link fence at the rear of the school and OMEGA fencing in the front of the school (See Appendix I: Perimeter Fencing Option)

<table>
<thead>
<tr>
<th></th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated cost of 4 foot</td>
<td>$ 4,956</td>
</tr>
<tr>
<td>fence at rear of school</td>
<td></td>
</tr>
<tr>
<td>Estimated cost of Omega</td>
<td>$16,814</td>
</tr>
<tr>
<td>fence in front of the school</td>
<td></td>
</tr>
<tr>
<td>Total estimated cost for</td>
<td>$21,770 plus tax</td>
</tr>
<tr>
<td>Option 2</td>
<td></td>
</tr>
</tbody>
</table>

Not included is the cost of installing the Omega fence.

**Option 3**
10 foot high chain link fence at the rear of the school and OMEGA fencing in the front of the school (See Appendix I: Perimeter Fencing Option)

<table>
<thead>
<tr>
<th></th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated cost of 10 foot</td>
<td>$11,790</td>
</tr>
<tr>
<td>fence at rear of school</td>
<td></td>
</tr>
<tr>
<td>Estimated cost of Omega</td>
<td>$16,814</td>
</tr>
<tr>
<td>fence in front of the school</td>
<td></td>
</tr>
<tr>
<td>Total estimated cost for</td>
<td>$28,604 plus tax</td>
</tr>
<tr>
<td>Option 2</td>
<td></td>
</tr>
</tbody>
</table>

Not included is the cost of installing the Omega fence.

**Option 4**
Phase 1 design as illustrated in Appendix G proposes the following:
- 4 feet high fence in front of the school (Dunrae Avenue) until the emergency vehicle driveway;
- 6 feet high fence along the property line from the emergency vehicle driveway to beginning of the soccer field;
- 10 feet high fence around on the 3 sides of the soccer field;
- 6 feet high fence in the back of the school (along Mohawk Park border) from the soccer field until the back entrance; and
- 4 feet high fence for the remaining sections around the parking lot.

No estimate for this option is provided.
With regard to the dedicated drop-off zones, when last discussed, the Town of Mont Royal did not indicate if there would be a cost associated with changing the traffic and parking restriction signage.

**PHASE 2 - SOCCER FIELD**

The estimated cost of the soccer field, based on the landscape architect’s cost estimate, is:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leveling the surface</td>
<td>$18,816</td>
</tr>
<tr>
<td>Grass (ensemencement hydraulique)</td>
<td>$13,440</td>
</tr>
<tr>
<td>10 foot fence surrounding soccer field</td>
<td>$21,720</td>
</tr>
<tr>
<td><strong>Total estimated cost for the soccer field</strong></td>
<td><strong>$53,976 plus tax</strong></td>
</tr>
</tbody>
</table>

Not included in the estimate is the cost of: soccer nets and painting field lines.

**PHASE 3 - LA CAMPAGNE – DUNRAE’S GARDENS**

The cost of the garden area is dependent on the scenario selected. Three organizations were contact for estimates for the *La Campagne* thematic area. Below are brief descriptions of each (as per their websites) with some additional information.

**SEMIS URBAINS – URBAN SEEDLING**

From the Semis Urbains website ([www.urbanseedling.com](http://www.urbanseedling.com)):

*Our mission at Urban Seedling is simple: to create an easy and enjoyable gardening experience. Many people dream of the fresh taste and convenience of homegrown organic vegetables, but lack the know-how or time to start their own garden. This is where we come in - we are Montreal's first organic vegetable gardeners for hire. Urban Seedling is an all-inclusive vegetable gardening service in Montreal.*

Semis Urbains approach is Scenario One. In order to avoid summer maintenance costs, they suggest limiting planting to quick growing plants (e.g., salads), so that students can experience planting and harvesting, but without the extra cost or burden of summer maintenance.

Semis Urbains has experience working with schools. One past client is St. George’s School of Montreal.

**MICROHABITAT**

From the Microhabitat website ([http://microhabitat.ca/](http://microhabitat.ca/)):

*Depending on your needs as an individual, a restaurant, or as a business, we offer a wide range of agricultural services to provide you with the most local and quality produce available on the market.
  - We install - We come to your business and install a productive edible garden of the size that you desire on its rooftop or in its yard.*
- **We maintain**- We maintain the edible garden all season long. During our visits, we will teach the employees of your business how to cater to the garden.
- **You harvest**- You and your employees harvest the herbs, vegetables, fruits, and flowers that are grown throughout the season, with our guidance.

Microhabitat provides maintenance services; therefore their approach is Scenario Two. Scenario Two allows for a larger variety of vegetables to be planted. Microhabitat has not experience at this time with schools, their clients are mainly restaurants. Microhabitat did not suggest a size of garden. Given that they use 30 gallon pots as opposed to a fixed raised garden bed, they provided a cost per square foot.

**COOP BIOMA**

From the Coop Bioma website ([www.coopbioma.com](http://www.coopbioma.com)):

*Coop Bioma is a working cooperative based in Montréal, Quebec that specializes in urban agriculture, ecological gardening, edible landscapes, education and advice. In addition to our services, CoopBioma also aims to contribute to positive socio-ecological transformation through a range of community orientated projects, including local food production and the re-appropriation of underused urban spaces for community benefit.*

Coop Bioma is a cooperative and their approach is Scenario Three. They have worked with educational institutions and community groups. Aside from the workshops, they are also interested in developing an Extra-Curricular Activity for the school that would be centered on gardening and food. It was via Coop Bioma that La Place Commune was made aware of this project.

**EVALUATION**

In order to compare the various scenarios, the cost per square foot was used. The garden set-up cost would be for the first year and includes the cost of the building the raised gardens beds, or for the pots (as per Microhabitat’s system). In order to keep the gardens productive, an annual maintenance is required – for compost and organic fertilizers. Each organization provides workshops, although the number of persons per workshop varies slightly. The following table compares the quotes based on building 200 square feet of garden and have 4 days of workshops. One day of workshops is estimated to be three 90-minutes workshops. The duration of the workshops can be modified to the school’s need. This square footage of garden and number of workshops was used sole for comparison purposes. All quotes that were received are available in Appendix E.
As stated earlier, Scenario Three is the most interesting scenario since a partnership can help offset the recurring summer maintenance expenses and the fact that the school will be associated with an organization working provide food to low income families. In terms of the cost of Scenario Three, Coop Bioma has the most inexpensive set-up and annual maintenance costs. Therefore, it is recommended that the school pursue Scenario Three with Coop Bioma.

The estimated cost of the garden, based on Coop Bioma’s quotes:

**Garden Construction and first year planting:** $12,924  
*Includes shed, tool kits and irrigation*

**Workshops (9 workshops over 3 days):** $870

**4 foot fence around garden (est. 212 linear feet):** $2,544 (if new fence)

**Total estimated cost** $16,338 plus tax

Not included is the summer maintenance cost which would be provided by a community partner.

**Supporting Program costs:** Beehive (Appendix J) $1,600 plus tax

**PHASE 4 - SCHOOLYARD**

The estimate for the construction of the remainder of the schoolyard’s thematic areas, including outdoor classroom, according to the landscape architect’s estimate:

**Asphalt surfaces:** $83,196

**Landscaping - plants and vegetation:** $77,157

**New entrance path:** $10,800

**Outdoor furniture and accessories:** $11,764

**Footpaths:** $7,542

**Outdoor classroom:** $12,000

**Total estimated cost** $202,459 plus tax
C. GRANTS

There are various grants available that can help cover the cost of portions of the Schoolyard Naturalization Project.

The following table lists available grants and the components of the Schoolyard Naturalization Project Proposal & Design to which the grant can apply, as well as the maximum funding available, deadlines for applying and when a response is provided by the funding source.

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Component</th>
<th>Max. Funding</th>
<th>Deadline</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD Friends of the Environment</td>
<td>La Campgne – Dunrae’s Gardens</td>
<td>$5,800</td>
<td>19-Sept-2016</td>
<td>February 2017</td>
</tr>
<tr>
<td>Majesta (Tree Canada &amp; Focus on Forests)</td>
<td>Outdoor Classroom</td>
<td>$20,000</td>
<td>September 2016</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Toyota Evergreen Learning Grounds Grant</td>
<td>Dunrae’s Arboretum, Thematic Areas</td>
<td>$3,500</td>
<td>16-Sept-2016 &amp; 4-Nov-2016</td>
<td>2017-2018</td>
</tr>
<tr>
<td>World Wildlife Fund</td>
<td>Thematic Areas, Dunrae’s Arboretum or Bees</td>
<td>$500</td>
<td>Fall 2016 (TBC)</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Tree Canada Greening Canada’s School Ground</td>
<td>Dunrae’s Arboretum</td>
<td>$3,000</td>
<td>Applications accepted year round.</td>
<td>2016-2017</td>
</tr>
<tr>
<td>ImagineAction (Canadian Teacher’s Federation)</td>
<td>Pedagogical Resources</td>
<td>$750</td>
<td>Fall &amp; winter</td>
<td></td>
</tr>
<tr>
<td>Scoots Miracle GRO1000 Grassroots Grant</td>
<td>La Campgne – Dunrae’s Gardens: Butterfly and Pollinator’s Garden</td>
<td>$1,500</td>
<td>January 2017</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Canadian Scholarship Trust Foundation: CST</td>
<td>Thematic Areas, Outdoor Classroom, Pedagogical Resources - learning opportunities, programs, or activities.</td>
<td>$100,000 to $2,500</td>
<td>April 2017</td>
<td>2017-18</td>
</tr>
<tr>
<td>English Montreal School Board – Green Plan Committee</td>
<td>Non specific</td>
<td>Up to $5000</td>
<td>TBD</td>
<td></td>
</tr>
</tbody>
</table>

SOCCER FIELD BEAUTIFICATION GRANT - MINISTÈRE DE L’ÉDUCATION ET DE L’ENSEIGNEMENT SUPÉRIEUR

As stated earlier, the soccer field was the recipient of a beautification grant offered by the Ministère de l’Éducation et de l’Enseignement supérieur (MELS) that remains available.

The soccer field component of the Schoolyard Naturalization Project Proposal & Design will need to be presented to TMR and, if the specification of the proposed soccer field meets the needs of TMR, formal
discussions can be initiated on a potential partnership in order to take advantage of the soccer field beautification three-way partnership grant. If unsuccessful, an alternative third-partner would be sought out. The potential funding of this grant is $75,000.

D. FUNDRAISING CAMPAIGNS

Although grants do exist for some components of the project, fundraising by the school community will be required.

GREEN FUNDRAISERS

In association with the Dunrae Gardens Home & School Association, two fundraising activities are planned to raise funds for the completion of the Schoolyard Naturalization Project:

- Vesey’s Fundraising Program with Flower Bulbs & Seeds (Fall 2016)
- Make It Sow’s Great Green Garden Fundraiser Program (Spring 2017)

Both fundraisers are garden themed and therefore the proceeds of the fundraising can be specifically allocated for the La Campagne – Dunrae’s Garden thematic area.

VESEY’S FUNDRAISING PROGRAM WITH FLOWER BULBS & SEEDS

Vesey’s Fundraising Program features the sale of bulbs and plants that are planted in the fall. The school earns 50% for every dollar sold. Vesey’s covers all additional costs including shipping.

A campaign could be organized for Fall 2016 and/or 2017.

MAKE IT SOW’S GREAT GREEN GARDEN FUNDRAISER PROGRAM

Make It Sow’s Great Green Garden Fundraising program features the sale of seeds that are planted in the spring. The school earns 50% for every dollar sold. Make It Sow covers all additional costs including shipping.

A campaign will be organized for Spring 2017.

PLANT A TREE CAMPAIGN

Given that 62 new trees are planned in the Schoolyard Naturalization Project Design Proposal, this presents an opportunity for a Plant A Tree campaign. The Plant A Tree campaign, which can be carried out by the school or Home & School Association, would offer the school community the opportunity to fund the cost of the new trees – a tangible contribution. The trees to be planted will vary in size and, therefore in cost, providing an opportunity to members of the school community to give according to their means. Donor recognition could potentially be incorporated in the trees’ information label.

The details and timing of the campaign are still to be determined.
DONATION CAMPAIGN

Aside from the aforementioned specific area campaigns, a general campaign for the entirety of the Schoolyard Naturalization Project can be planned. According to the 2015 Schoolyard Naturalization Project Survey Report (See Appendix B), 84% of the respondents indicated that they would be willing to make a contribution to the Schoolyard Naturalization Project.

The details and timing of the campaign, including a donor recognition program are still to be determined.

E. ENGLISH MONTREAL SCHOOL BOARD

Aside from the aforementioned Soccer Field Beautification Grant from the Ministère de l'Éducation et de l'Enseignement supérieur, a financial contribution of the English Montreal School Board is expected.

Parents and guardians, via the Dunrae Gardens Home & School Association, have spent $59,714 on various infrastructure and capital improvements to the school facilities, including:

- Painting of 7 classrooms, all stairwells and corridors ($26,401) in 2015
- Purchase and installation of 2 outdoor basketball nets ($4,047) in 2015
- Painting third floor classrooms and art room ($15,000) in 2016
- Outdoor pavement games ($4,167) in 2014
- Literary Room ($5,000) in 2016
- Teacher’s room chairs ($2,690) in 2016
- Laminating machine ($2,408) in 2015

The Schoolyard Naturalization Project Proposal & Design will be presented to EMSB along with a request for funding at least equivalent to the amount that the parents and guardians have provided to subsidize infrastructure and capital improvements over the last 3 school years.

8. SUPPORTING PROGRAMS

One of the positive impacts that may occur from the Schoolyard Naturalization Project is that students will become more aware of nature and their natural surroundings. This is extremely important given our students are living in a time where sustainability, climate change and environmental awareness are seen as key issues.

Although the biggest portion of the Schoolyard Naturalization Project is making physical changes to the outdoor space, it is important to institute other programs that will complement the new naturalized schoolyard.
A. BEES

In recent years the plight of the bees has been a topic discussed by both environmentalists and economists (Spivak, 2011; Walsh, 2013). Urban apiculture has moved from a fringe activity to mainstream. Bee colonies thrive in urban centres where pesticides are banned by municipal regulations.

In 2014, the TMR Townschool Council successfully petitioned the TMR Town Council to include an exception in the municipal by-law prohibiting beehives in order to allow beehives on municipal and school board property. The TMR Townschool Council then had TMR install a beehive on the roof of Town Hall. A Dunrae student, Juliette Durocher, was a member of the TMR Schooltown Council and helped make the case in defense of bees. She was quoted in a Montreal Gazette article (April 22, 2014): “I learned that when bees pollinate flowers, they also help fruits and vegetables grow. They’re important to all of us and it’s unfair what we do to them when we pollute. We can be much better to protect the environment.”

The installation of a beehive at Dunrae Gardens would be a great learning opportunity and would complement to the Schoolyard Naturalization Project.

In the Spring of 2016, a representative from Alveole (www.alveole.buzz) visited the school and identified an ideal location for a beehive. Alveole is one of several beekeeping companies and not for profit organizations who offer beekeeping services to schools. In addition to beekeeping services, Alveole offers hands on workshops that can be incorporated into the curriculum. As an added benefit, the school gets to keep the honey that is generated by the beehive and it can be used to fundraise to cover the annual operating costs of the beehive and possibility generate extra funds.

Potential school-wide or grade-specific projects: A book on Dunrae’s Bees that covers plant anatomy, pollination, bee life cycle, impact of pesticides and pollution on bee populations, how to help the bees.

See Appendix J: Alvéole Contrat de Service

B. TROTTIBUS

On May 4, 2016, Dunrae Garden’s became the first school in the English Montreal School Board to participate in the Canadian Cancer Society’s Trottibus Walking School Bus. The initiative encourages children to safely walk to school through planned routes accompanied by screened volunteers.

The Trottibus Walking School Bus is a “human or pedestrian bus” that relies on parents or volunteers from the school’s neighbourhood to accompany the registered children in a group along planned routes.
with scheduled stops. In order for the program to be implemented at a school, Canadian Cancer Society insists on certain security criteria. All volunteers must undergo a criminal background check, take road safety training and wear a fluorescent project vest, so that the group walks safely and remains very visible by its number and yellow vests.

Aside from the health benefits of walking to school, the Trottibus initiative teaches student about sustainable transportation. The program, which will hopefully continue in 2016-17, can also be seen as a complement to the Schoolyard Naturalization Project.

### C. RECYCLING & COMPOSTING

The Quebec government’s residual materials management policy includes an eventual ban on the disposal of organic waste in landfills. The government wants to ensure that waste organic material is diverted from landfill disposal sites and is handled in such a way as to maximize its value by composting. In its Proposed Metropolitain Waste Management Plan 2015-2020, the Communauté métropolitain de Montréal to recycle 60% of organic putrescible waste using biological processes such as land farming, composting and biomethanation. In order to achieve this goal, institutions such as schools will need to start composting.

Currently, there is no composting at Dunrae Gardens and recycling is limited to paper. The school should lobby the EMSB for Dunrae Gardens to introduce composting and to increase recycling to include metal, plastic and glass. Contrary to popular belief, increasing recycling and implementing composting is not an added expense as overall waste management costs can be reduced when garbage collection is reduced as a result of increased diversion to recycling and composting. Moreover, recycling campaigns also incorporate awareness around reducing the amount of garbage we generate.

The proposed design includes the installation of recycling and compost bins outside in the schoolyard. Currently only a garbage bin is available.

A potential school-wide project includes conducting a waste audit – using specialized audit tables tailored for primary schools, students can calculate how much recyclable and compostable waste is currently being sent to landfill. The school then can initiate a competition whereby classrooms compete to see who can reduce the amount of waste being sent to landfill. This activity can help increase awareness around recycling and the impact of our waste on the environment. Announcement of the winners can be coordinated to occur on Earth Day (April 22).

### 9. PRIORITIZATION & NEXT STEPS

At the September 7, 2016 meeting of the Dunrae Gardens Governing Board, the Governing Board voted unanimously to move ahead with Phase 1 Safety & Security and Phase 2 Soccer Field of the Schoolyard Naturalization Project.

As a result, this proposal will be submitted to the English Montreal School Board for the necessary approvals for Phase 1 and Phase 2. As well, the Town of Mont-Royal will be contacted with regards to those elements that require municipal approval and municipal support.
10. REFERENCES


Ladner, Peter. The Urban Food Revolution - Changing the Way We Feed Cities. New Society Publishers, 2011.


APPENDIX A: SCHOOLYARD NATURALIZATION PROJECT DESIGN PROPOSAL

The following is the landscape design proposal for the Schoolyard Naturalization Project prepare by Luc Osta, Landscape Architect, StudioCAPT Inc. (7320 place Trévi, Brossard, QC Canada J4W-3C8, www.studiocapt.com).
ÉCOLE PRIMAIRE
"Dunrobin Gardens"

AMÉNAGEMENT PROPOSÉ

LÉGENDE

Arbres existants sur le terrain de l'école 22
Arbres existants sur le terrain de la ville 26
Arbres projetés sur le terrain de l'école 62
Arbres projetés sur le terrain de la ville 6

Total : 116 arbres

Surface asphaltée
Surface gazonnée
Surfaces végétalisées (plates-bandes)
Surface en poussière de pierre (passages)

Limites de propriété
Dunrae Gardens School
2015 School Yard Naturalization Project Survey Report

Pietro Gasparrini
Chair, Governing Board
École Dunrae Gardens School
September 15, 2015
Introduction

The objective of the School Yard Naturalization Project is to enhance the learning and social experience by extending the classroom to include all the school grounds, as well as to enhance the safety and security of the students.

As part of the Dunrae Gardens School Yard Naturalization Project, on March 17, 2015, the Governing Board approved a series of surveys for the school community in order to obtain opinions and ideas for school grounds.

Three different surveys were distributed:
   I. Parent/Guardian Survey
   II. Staff Survey
   III. Student Survey (Cycles 2 & 3)

This report contains aggregate results based from the information gathered from these surveys and it will be provided to the landscape architect hired to prepare the design of the school grounds.

Part I: Parent/Guardian Survey

Response Rate

The survey was sent to all parents/guardians. 101 surveys were returned, of which 1 had no name, therefore only 100 surveys were considered.

Currently there are 297 families with children registered at the school. The 101 families completed all or portions of the survey, representing a 34% response rate.

Not all respondents provided answers to all the survey questions. The number of respondents per question (represented by n) is indicated for each question.

Results

2. Demographic Information of Survey Respondents

Number of children in each grade (n=100)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>35</td>
</tr>
<tr>
<td>Grade 1</td>
<td>18</td>
</tr>
<tr>
<td>Grade 2</td>
<td>17</td>
</tr>
<tr>
<td>Grade 3</td>
<td>21</td>
</tr>
<tr>
<td>Grade 4</td>
<td>18</td>
</tr>
<tr>
<td>Grade 5</td>
<td>9</td>
</tr>
<tr>
<td>Grade 6</td>
<td>5</td>
</tr>
</tbody>
</table>

The respondents represent 123 students who attend the school.
3. **How do your children currently get to school? (n=100)**

- 55% Get driven (55)
- 20% School Bus (20)
- 10% Get driven & Walk (10)
- 7% School Bus & Get Driven (7)
- 4% Walk (4)
- 2% School Bus & Walk (2)
- 2% Get driven & Bike (2)

4. **Do your children currently use the daycare service? (n=100)**

- 43% No (43)
- 38% Yes, both before & after school (38)
- 16% Occasionally (16)
- 2% Yes, after school (2)
- 1% Yes, before school (1)

5. **Do you or your children use the school grounds outside of regular school hours? (n=100)**

- 58% No (58)
- 21% After school (21)
- 10% Before & After school (10)
- 3% Before school (3)
- 1% Evenings (1)

Five respondents indicated they use the soccer field on week-ends.

6. **Please respond to the following statements concerning the CURRENT school grounds, specifically with regards to the physical layout and condition of the grounds:**

   *Results by number of respondents:*

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child is safe playing outside at school during school hours</td>
<td>97</td>
<td>5</td>
<td>19</td>
<td>16</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>There is adequate play space</td>
<td>95</td>
<td>4</td>
<td>13</td>
<td>9</td>
<td>46</td>
<td>23</td>
</tr>
<tr>
<td>There is adequate parking</td>
<td>97</td>
<td>11</td>
<td>22</td>
<td>31</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Dedicated school bus area is well situated and identified.</td>
<td>97</td>
<td>4</td>
<td>9</td>
<td>9</td>
<td>47</td>
<td>28</td>
</tr>
<tr>
<td>Dropping off and picking up my child/children is convenient.</td>
<td>97</td>
<td>6</td>
<td>14</td>
<td>27</td>
<td>41</td>
<td>9</td>
</tr>
<tr>
<td>The school grounds encourage lots of physical activity/play.</td>
<td>95</td>
<td>5</td>
<td>25</td>
<td>23</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>The school has a great outdoor learning environment.</td>
<td>95</td>
<td>7</td>
<td>35</td>
<td>26</td>
<td>21</td>
<td>6</td>
</tr>
</tbody>
</table>
Results by percentage of respondents:

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child is safe playing outside at school during school hours</td>
<td>97</td>
<td>5%</td>
<td>20%</td>
<td>16%</td>
<td>36%</td>
<td>23%</td>
</tr>
<tr>
<td>There is adequate play space</td>
<td>95</td>
<td>4%</td>
<td>14%</td>
<td>10%</td>
<td>48%</td>
<td>24%</td>
</tr>
<tr>
<td>There is adequate parking</td>
<td>97</td>
<td>11%</td>
<td>23%</td>
<td>32%</td>
<td>26%</td>
<td>8%</td>
</tr>
<tr>
<td>Dedicated school bus area is well situated and identified.</td>
<td>97</td>
<td>4%</td>
<td>9%</td>
<td>9%</td>
<td>49%</td>
<td>29%</td>
</tr>
<tr>
<td>Dropping off and picking up my child/children is convenient.</td>
<td>97</td>
<td>6%</td>
<td>15%</td>
<td>28%</td>
<td>42%</td>
<td>9%</td>
</tr>
<tr>
<td>The school grounds encourage lots of physical activity/play.</td>
<td>95</td>
<td>5%</td>
<td>26%</td>
<td>24%</td>
<td>33%</td>
<td>12%</td>
</tr>
<tr>
<td>The school has a great outdoor learning environment.</td>
<td>95</td>
<td>7.5%</td>
<td>37%</td>
<td>27.5%</td>
<td>22%</td>
<td>6%</td>
</tr>
</tbody>
</table>

40 Respondents made comments. Comments were analysed and the following reoccurring themes emerged:
- Encourage more play and physical activity (n=9)
- Traffic safety concerns (e.g. ignoring traffic signage) (n=7)
- Fence needed (n=8)
- Safety concerns (e.g. intruders, abductions) (n=5)
- Drop-off/pick-up issues (e.g. parking in winter) (n=3)
- Make use of unused space (n=3)
- School bus signage and safety concerns (n=1)

7. Do you have any concerns with the current physical layout and/or conditions of the school grounds? (n=97)

The response rate for this question was very high at 97%. Answers were analysed and the following reoccurring themes emerged:
- Fence needed and state of disrepair of existing fence (n=23)
- Not enough play space for students even though a lot of land is available (e.g. underutilized space, K-Cycle 1 are too small) (n=15)
- The state of the soccer field and access to it (e.g. leveling, drainage, muddy) (n=8)
- Safety concerns (mainly associated with lack of fence) (n=7)
- Traffic safety concerns (e.g. ignoring traffic signage) (n=7)
- Play surfaces too hard, especially for K-Cycle 1 (n=7)
- School ground too open and accessible to non-students during school hours (e.g., dog walker, high school students) (n=5)
- Drop-off/pick-up issues (e.g. parking in winter) (n=5)
- Traffics safety concerns (e.g. ignoring traffic signage) (n=4)
- Condition of school grounds during the winter (e.g. icy) (n=4)
- Bike parking (n=2)
- Lack of play structures (n=2)

Many of the respondents highlighted one or two concerns. References to safety and security were often coupled with an indication that a fence is required or that drivers fail to respect traffic signage around the school. Answers made regarding play space centered on the fact that the school grounds are vast, however the area where the students are permitted to play is limited. It is unclear as to why students are not permitted to play on all the school grounds – the reasons are not communicated to parents.

8. Which part(s) of the existing school grounds do you LIKE? And why? (n=95)

Answers were analysed and the majority of answers (n=59, 67%) indicated that the positive aspects of the school grounds are the size of the school grounds, the amount of green space, its openness and the large field. However, in many instances answers regarding the field and grass portions of the school grounds included additional remarks on lack of accessibility; the field and grass areas are seen as underutilized due to school imposed rules.

In addition, 9 respondents indicated they like the painted asphalt games and 5 indicated they liked the basketball nets.

Although the question requested feedback with regards to those parts of the school grounds that are liked, respondents also included comments with regards to what they did not like.

9. Which part(s) of the existing school grounds do you think needs improvement? And why? (n=92)

The response rate for this question was 92%. Answers were analysed and the following reoccurring themes emerged:
- Fence needed and state of disrepair of existing fence (n=19)
- Additional trees, vegetation, flowers, shrubs, gardens (n=10)
- Not enough play space for students, even though lots of land available (e.g. underutilized space) (n=8)
- The Kindergarten-Cycle 1 play area needs improvement (front of school) (n=7)
- The bad state of the soccer field and, associated with that, the limited access to the field (e.g. leveling, drainage, muddy) (n=7)
- Soccer nets (n=5)
- Basketball nets (n=5)
- A play structure on school grounds (n=5)
- Traffics signage (n=3)
10. If you currently drop-off and pick-up your child/children at school, do you have any concerns? (n=91)

Of the 91 responses, 5 indicated no concerns. 95% (86) of respondents indicated some level of concern. Answers were analysed and the following reoccurring themes emerged:
- Drivers ignore traffic signage and restrictions, specifically on Dunrae Avenue (n=16)
- Traffic congestion caused by too many cars on the narrow streets around the school, mostly during morning drop-off (n=12)
- Lack of available parking, mostly during morning drop-off (n=11)
- Parents ignore rules regarding accessing the school grounds (n=6)

The need for a dedicated drop-off zone was echoed by several respondents; the drop off zone would ideally avoid children from having to cross the street. Answers included comments on crowded sidewalks and a sense of chaos during morning drop-off and when school let’s out. Some respondents questioned the duration of traffic restrictions, specifically in the afternoon, stating that existing restrictions complicate afternoon daycare pickup, notably in the winter.

11. If your child/children currently takes the school bus, do you have any concerns (n=70)

Only 70 respondents answered this question. Answers were analysed and no major reoccurring themes emerged. Of the 18 answers, 6 were positive comments regarding the school bus service. 5 answers dealt with bus safety at the school, including the quantity of buses, concerns on how the school bus circulate and approach the school (turn the corner), the traffic caused by the cars and buses together, and bus supervision (ensuring children get on the right bus). Finally, the remaining answers related to the authority of the bus driver, bus routes and the behaviour of children on buses – these comments will be shared with the school administration but are outside the scope of the survey.

12. Which elements would you like to see as part of the Dunrae Gardens’ school grounds? Check all that apply. (n=100)

<table>
<thead>
<tr>
<th>Element</th>
<th>Number of Positive Responses</th>
<th>Percentage of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education garden (planting beds)</td>
<td>61</td>
<td>61%</td>
</tr>
<tr>
<td>Outdoor classroom</td>
<td>52</td>
<td>52%</td>
</tr>
<tr>
<td>Green spaces (trees, lawn, shrub/border plantings)</td>
<td>58</td>
<td>58%</td>
</tr>
<tr>
<td>Seating and gathering areas/social spaces (tree benches, benches, tables)</td>
<td>62</td>
<td>62%</td>
</tr>
</tbody>
</table>
Eight (8) respondents listed other elements, which included: soccer nets, bike parking, play structure for Kindergarten and Cycle 1 students, natural hedge, climbing structure and play activities.

13. Part 1: Currently, portions of the perimeter of the school grounds are open (along Dunrae Avenue and Dumfries Road, behind school bordering Mohawk Park). Would you like to see the school grounds completely enclosed? (n=77)

53% Yes (41)
47% No (36)

23 Respondents did not provide an answer for Part 1.

Part 2. Please specify which open portions of the school grounds you would like to see closed:

Results by number of respondents:

<table>
<thead>
<tr>
<th>Location</th>
<th>Yes</th>
<th>No</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Along Dunrae Avenue (n=82)</td>
<td>57</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Along Dumfries Road (n=80)</td>
<td>45</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>Behind school bordering Mohawk Park (n=75)</td>
<td>49</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

Results by percentage of respondents:

<table>
<thead>
<tr>
<th>Location</th>
<th>Yes</th>
<th>No</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Along Dunrae Avenue (n=82)</td>
<td>70%</td>
<td>23%</td>
<td>7%</td>
</tr>
<tr>
<td>Along Dumfries Road (n=80)</td>
<td>56%</td>
<td>28%</td>
<td>16%</td>
</tr>
<tr>
<td>Behind school bordering Mohawk Park (n=75)</td>
<td>65%</td>
<td>20%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Respondents were permitted to add additional comments for Part 2 of Question 13; 42 comments were received. Comments were analysed and the same reoccurring themes emerged, specifically the safety and security of the students (n=11) and concerns regarding drivers ignoring traffic...
restrictions (n=6). The portion of the respondent’s comments associate the need for a fence with being beneficial for the safety and security of the students. The safety and security issues identified by respondents include: the close proximity of the school yard to the road; the drivers who do not respect traffic signage; the vastness and openness of the school grounds; parents who do not respect instructions regarding accessing school grounds; and strangers approaching the children. Positive comments were made regarding the supervision of the students (n=2) and there is some concern that a fence will make the school look less welcoming and more institutional.

14. The school grounds can be enclosed using a variety of barriers, including fences and landscaping. Fencing options include chain-link, picket, logs/wood and aluminum. Landscaping options include hedges and bushes. Please provide your opinion on how you would like to see the school grounds enclosed. (n=97)

The questions served to obtain the opinion of parents and guardians with regards to the type of barrier that could potentially be used, if determined that a barrier is required. Some respondents took the opportunity to reiterate their opinion that no additional fencing is required (n=7).

Of the answers received, the majority (n=34) stated that they believe a chain link fence was best. Landscaping options, including hedges and bushes were also popular (n=25). Several respondents (n=7) stated that they preferred a combination of fencing and hedges and shrubs. Respondents were conscientious of the cost of the various options; some stating that although landscaping options were more aesthetically appealing, there would be a higher capital cost and would require more maintenance. A small portion of respondents (n=3) discredited any landscaping options for security and safety reasons (e.g., abductors hiding in the bushes).

15. Some elements of the School Yard Naturalization Project may require fund raising to be achieved - would you be willing to make a contribution? (n=94)

84% Yes (79)
16% No (15)

16. Some elements of the School Yard Naturalization Project may require volunteer involvement to be achieved - would you be willing to volunteer? (n=92)

62% Yes (57)
38% No (35)

17. If you answered YES above, please specify how would you like to be involved? Check all that apply? (n=57)

Some respondents replied positively to more than one type of involvement. Of the 57 Respondents who answered YES to Question 15:
- 37% would like to be involved with planning fundraising activities (n=21)
- 18% would be willing to donating professional expertise/services (ex: landscape architect, educational design, landscaping) (n=10)
- 47% would be interested in being a regular volunteer in schoolyard projects throughout the year (n=27)

In addition, 5 respondents volunteered to help with planting and 3 respondents volunteered to help with building and 1 respondent volunteered to be a member of the committee.

**Part II: Student Survey**

**Response Rate**

The student survey was completed by the students in Grades 3, 4, 5 and 6 in May 2015. 220 surveys were returned and were considered.

During the 2014-15 school year there are 408 students registered at Dunrae, of which 236 are in Grades 3, 4, 5 and 6. The 220 surveys are representative of 93% of the targeted students (Grades 3, 4, 5 and 6) and 54% of the total student population. Kindergarten, Grade 1 and Grade 2 students did not participate given the survey was only available in English and that the ability to read and write in English was required.

Not all students provided answers to all the survey questions. The number of respondents per question (represented by n) is indicated for each question.

**Results**

1. **Demographic Information of Survey Respondents**

   **Grade (n=218)**
   - 51 children in Grade 3 (23.3%)
   - 53 children in Grade 4 (24.3%)
   - 52 children in Grade 5 (24%)
   - 62 children in Grade 6 (28.4%)

2. **Do you go to daycare? (n=220)**
   - 60% No (113)
   - 26% Yes, both before & after school (53)
   - 10% Sometimes (23)
   - 3% Yes, after school (6)
   - 1% Yes, before school (2)

3. **How do you get to school? (n=220)**
   - 42.3% Get driven (93)
   - 21.8% School Bus (48)
   - 13.2% Get driven & Walk (29)
   - 12.7% School Bus & Get Driven (28)
   - 5% Get Driven & Bike (11)
   - 3.6% Walk (8)
   - 0.9% School Bus & Walk (2)
   - 0.5% Bike (1)
5. How do you get home? (n=220)
   - 40.9% Get driven (90)
   - 24.1% School Bus (53)
   - 11.8% Get driven & Walk (26)
   - 12.3% School Bus & Get Driven (27)
   - 5.4% Get Driven & Bike (12)
   - 4.5% Walk (10)
   - 0.5% School Bus & Walk (1)
   - 0.5% Walk & Bike (1)

6. Do you like to play outside? (n=220)
   - 92% Yes (203)
   - 8% No (17)

7. What games or activities do you and your friends like to play outside? (n=220)
   This question was open ended, with no suggested responses. The activities listed below are those that at least 10% of the students listed. The percentages of respondents who listed the activity are indicated in parenthesis.
   - Soccer (47%)
   - Tag (42%)
   - Skipping rope (30%)
   - Basketball (25%)
   - Talking (15%)
   - Hide & Seek (13%)
   - Football (11%)
   - Running (10%)

8. What is your favourite part of the schoolyard? (n=220)
   This question was open ended, with no suggested responses. The activities are listed below are those that at least 5% of the students listed. The percentages of respondents who gave the same response are indicated in parenthesis.
   - Field/Soccer Field (69%)
   - Basketball nets (12%)
   - Pavement games (9%)

9. If you could fix up your schoolyard, what would change? (n=220)
   This question was open ended, with no suggested responses. The activities are listed below are those that at least 5% of the students listed. The percentages of respondents who gave the same response are indicated in parenthesis.
   - Soccer nets (30%)
   - Access to the field for all grades (20%)
   - Two basketball nets (15%)
   - Benches (15%)
   - Private park/playground (12%)
   - Flower gardens (12%)
   - Tables (11%)
   - Trees (8%)
   - Higher fence (7%)
   - Swings (6%)
   - New grass (6%)
   - Bouncy house/inflatables (6%)
   - Bigger field (5%)
   - Change the cement to grass (5%)
   - Jungle gym (5%)
   - Water fountain (5%)
A notable comment, which was made by 3 students, was the lack of garbage cans. This was in addition to 3 students who complained of too much garbage. Therefore additional garbage and recycling bins for the exterior of the school may be required.

The students were very imaginative when responding to this question. On the students’ wish list for the school yard are an arena, waterslides, a pool and trampolines.

10. What things would like to see in your school yard? Pick your top 3 (n=220)

<table>
<thead>
<tr>
<th>Element</th>
<th>Number of Positive Responses</th>
<th>Percentage of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place to sit (bench, tables)</td>
<td>157</td>
<td>71%</td>
</tr>
<tr>
<td>Walking trails or paths</td>
<td>73</td>
<td>33%</td>
</tr>
<tr>
<td>More trees and shrubs</td>
<td>68</td>
<td>31%</td>
</tr>
<tr>
<td>Flower Garden</td>
<td>44</td>
<td>20%</td>
</tr>
<tr>
<td>Vegetable garden</td>
<td>44</td>
<td>20%</td>
</tr>
<tr>
<td>Painted play graphics/pictures on the wall</td>
<td>45</td>
<td>20%</td>
</tr>
<tr>
<td>Artwork</td>
<td>35</td>
<td>16%</td>
</tr>
<tr>
<td>Painted play graphics/pictures on the pavement</td>
<td>36</td>
<td>16%</td>
</tr>
</tbody>
</table>

Part III: Staff Survey

Response Rate

The survey was distributed to all school staff. The survey was distributed by the Principal in May 2015 and the staff completed the survey anonymously. 32 surveys were returned. Not all respondents provided answers to all the survey questions. The number of respondents per question (represented by n) is indicated for each question.
Results

1. Please respond to the following statements concerning the CURRENT school grounds, specifically with regards to the physical layout and condition of the grounds:

Results by number of respondents:

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students are safe playing outside at school during school hours</td>
<td>31</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>There is adequate play space</td>
<td>32</td>
<td>0</td>
<td>7</td>
<td>3</td>
<td>10</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>There is adequate parking</td>
<td>30</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Dedicated school bus area is well situated and identified.</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>13</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Student drop off and pick up is convenient.</td>
<td>31</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>12</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>The school grounds encourage lots of physical activity/play.</td>
<td>30</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>The school has a great outdoor learning environment.</td>
<td>29</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>12</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Results by percentage of respondents:

<table>
<thead>
<tr>
<th>Statement</th>
<th>n</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students are safe playing outside at school during school hours</td>
<td>31</td>
<td>7%</td>
<td>3%</td>
<td>13%</td>
<td>32%</td>
<td>42%</td>
<td>3%</td>
</tr>
<tr>
<td>There is adequate play space</td>
<td>32</td>
<td>0%</td>
<td>22%</td>
<td>9%</td>
<td>31%</td>
<td>28%</td>
<td>0%</td>
</tr>
<tr>
<td>There is adequate parking</td>
<td>30</td>
<td>6.5%</td>
<td>30%</td>
<td>7%</td>
<td>6.5%</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td>Dedicated school bus area is well situated and identified.</td>
<td>30</td>
<td>0%</td>
<td>0%</td>
<td>7%</td>
<td>43%</td>
<td>47%</td>
<td>3%</td>
</tr>
<tr>
<td>Student drop off and pick up is convenient.</td>
<td>31</td>
<td>0%</td>
<td>13%</td>
<td>10%</td>
<td>39%</td>
<td>29%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Respondents made comments. Comments were analysed and the following reoccurring themes emerged:
- Lack of adequate play space during rainy weather and when the field is wet (n=4)
- School parking lot is difficult to access and potentially dangerous due to parents and guardians using the parking lot to drop-off and pick-up their children (n=2)
- The need for a fence (n=2)

2. **Do you have any concerns regarding parking? (n=26)**

Eight (8) respondents (31%) indicated they had no concerns.

Answers were analysed and the following themes emerged:
- Parents use parking lot to drop-off and pick-up their children resulting in less access for staff and presenting a risk to student safety due to traffic in and out of the parking lot (n=6)
- Not enough parking spaces (n=4)

3. **Do you have any concerns regarding the school yard before and after school hours? (n=21)**

Nine (9) respondents (43%) indicated they had no concerns.

Answers were analysed and the following themes emerged:
- The need for a fence around the entire school property (n=3)
- Parents and students lingering on the school grounds can cause confusion for students who are bused (n=3)
- Difficulty in supervising students due to the additional need to supervise the property perimeter to ensure unauthorized individuals are not present on the school grounds (n=2)
- Traffic in the school parking lot (n=1; expressed as an issue in Question 2)

4. **Do you have any concerns with the current physical layout and/or conditions of the school grounds? (n=20)**

Four (4) respondents (20%) indicated they had no concerns.

Answers were analysed and the following themes emerged:
- Disrepair of the pavement and building foundation (n=3)
- The need for a fence for the K-Cycle 1 portion of the school yard (n=2)
- More space for the students during rainy weather and when the field is wet (n=1)
- State of the field (not level) (n=1)
- Metal cage around the furnace room door (n=1)
- A higher fence or net along the Mohawk Park side for the school yard to catch balls (n=1)
- Additional basketball nets (n=1)
- Additional space for Cycle 2 students (n=1)
- Windows not adequately protected (n=1)

One respondent questioned why students were not permitted to use the whole field when outside. This comment echoed comments made by both parents and student regarding having access to the whole field. The reason for limiting access to the whole field needs to be better understood.

5. Which part(s) of the existing school grounds do you LIKE? And why? (n=23)
Answers were analysed and the following themes emerged:
- Field (n=7)
- Green space, along Dunrae and Dumfries (n=3)
- Back of the school (along Mohawk Park) (n=2)
- Painted play graphics (n=2)
- Proximity to parks (n=1)
- Openness of the space due to lack of fencing (n=1)

6. Which part(s) of the existing school grounds do you think needs improvement? And why? (n=23)
Most respondents provided multiple suggestions. Answers were analysed and the following themes emerged:
- Fence needed, in the front and back of the school (n=5)
- Field (n=3)
- Repair existing fence (n=2)
- Use the whole field (n=2)
- Additional space for Cycle 2 students (n=1)
- Parking lot (n=1)
- Outdoor seating area (n=1)
- Safety in the front of the school (n=1)

One respondent stated that one improvement would be to allow students to use the entire field. This suggestion could be implemented immediately, however, given that the reason for which access to the whole field is restricted is unknown, it may require some additional discussion with the school administration.

7. Which elements would you like to see as part of the Dunrae Gardens’ school grounds? Check all that apply. (n=31)

<table>
<thead>
<tr>
<th>Element</th>
<th>Number of Positive Responses</th>
<th>Percentage of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education garden (planting beds)</td>
<td>17</td>
<td>55%</td>
</tr>
</tbody>
</table>
Part 1: Currently, portions of the perimeter of the school grounds are open (along Dunrae Avenue and Dumfries Road, behind school bordering Mohawk Park). Would you like to see the school grounds completely enclosed? (n=29)

55% No (16)
45% Yes (13)

3 Respondents did not provide an answer for Part 1. One respondent indicating that the limited resources available to the school would be better spent elsewhere than on a fence.

Part 2. Please specify which open portions of the school grounds you would like to see closed:

Results by number of respondents:

<table>
<thead>
<tr>
<th>Area</th>
<th>Yes</th>
<th>No</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Along Dunrae Avenue (n=29)</td>
<td>14</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Along Dumfries Road (n=27)</td>
<td>12</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Behind school bordering Mohawk Park (n=27)</td>
<td>14</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>

Results by percentage of respondents:

<table>
<thead>
<tr>
<th>Area</th>
<th>Yes</th>
<th>No</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Along Dunrae Avenue (n=29)</td>
<td>48%</td>
<td>31%</td>
<td>21%</td>
</tr>
<tr>
<td>Along Dumfries Road (n=27)</td>
<td>44%</td>
<td>41%</td>
<td>15%</td>
</tr>
<tr>
<td>Behind school bordering Mohawk Park (n=27)</td>
<td>52%</td>
<td>33%</td>
<td>15%</td>
</tr>
</tbody>
</table>
9. The school grounds can be enclosed using a variety of barriers, including fences and landscaping. Fencing options include chain-link, picket, logs/wood and aluminum. Landscaping options include hedges and bushes. Please provide your opinion on how you would like to see the school grounds enclosed. (n=20)

The questions served to obtain the opinion of staff with regards to the type of barrier that could potentially be used, if determined that a barrier is required. Of the answers received, the majority (n=8, 40%) stated that they believe a landscaping option was best. A total of 6 respondents (30%) indicated their preference for a fencing option, of which 2 stated a chain-link fence and 1 a picket fence.

10. Over the last 2-3 years, did you take your class outdoor (excluding physical education class and other school-wide activities like Carnival and Olympic day)? If yes, please include details on the activity/activities. (n=28)

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Number of Positive Responses</th>
<th>Percentage of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Concerns</td>
<td>6</td>
<td>26%</td>
</tr>
<tr>
<td>Seasonal accessibility</td>
<td>11</td>
<td>48%</td>
</tr>
<tr>
<td>Concerns about students being distracted by being outdoors</td>
<td>5</td>
<td>22%</td>
</tr>
<tr>
<td>Not enough time</td>
<td>8</td>
<td>34%</td>
</tr>
<tr>
<td>No infrastructure for relevant activities</td>
<td>6</td>
<td>26%</td>
</tr>
<tr>
<td>Additional human resources (help/support) would be required</td>
<td>3</td>
<td>13%</td>
</tr>
</tbody>
</table>

Of those respondents who answered yes, the following activities were listed:
- Recreational play (n=5)
- Reading (n=2)
- Yoga/Relaxation (n=2)
- Science (n=1)
- Art (n=1)

11. What are the challenges preventing you from doing more outdoor educational activities/bringing your class outdoors? (n=23)
Respondents made the following comments:
- Concern regarding high school students on school property
- Clarification required with regards to what aspects of the QEP are applicable to an outdoor classroom

12. What support or other factors that could remedy these challenges and enable you to teach more outdoors? (n=8)

This question was open ended, with no suggested responses. The following were listed by respondents:
- Not enough time dedicated to science
- Preference to indoor classroom
- Need for seating, either tables or benches, in order to have classroom activities outdoors
- Better climate

13. If adequate facilities existed, weather permitting, would you hold classroom activities outdoors? (n=18)

78% Yes (14)
22% No (4)

Respondents also made comments. All comments were analysed and the following themes emerged:
- Holding classroom activities outdoors would be interesting (n=3)
- The weather is a factor in the use of the outdoors (n=2)
- Need for seating and tables (n=2)
- Some teaching activities are already done outdoors (n=2)
- For reading and drawing (n=1)
- Given the limited use, it is worth the investment? (n=1)
- Preference is given to enhancing teaching using the Smart Board (n=1)

14. Do you have any ideas or suggestions for the outdoor space? (n=13)

This question was open ended, with no suggested responses. The following were listed by respondents:
- Fencing (n=3)
- Create a garden (n=2)
- Outdoor space should only be used for students to play (n=2)
- The need for additional space for physical activity during rainy/wet days (n=1)
- The need for seating (n=1)
- Additional space required for Cycle 2 students (n=1)
- Establish the purpose of an outdoor classroom before building one (n=1)
**AMÉNAGEMENT EXISTANT**

**LÉGENDE**

- Arbres existants sur le terrain de l'école 22
- Arbres existants sur le terrain de la Ville 26
- Total d'arbres dans l'environnement de l'école: 116
- Sorties du bâtiment
- Entrées du bâtiment
- Entrées/Sorties des élèves dans la cour
- Entrées/Sorties des services d'urgences, des camions de livraison,
## APPENDIX D: PEDAGOGICAL RESOURCES

### BOOKS FOR TEACHERS

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Publisher</th>
<th>ISBN-10</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Little Bit of Dirt: 55+ Science and Art Activities to Reconnect</td>
<td>Asia Citro</td>
<td>The Innovation Press</td>
<td>978147217743</td>
<td>$17</td>
</tr>
<tr>
<td>Children with Nature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt to Ecosystems: Design Ideas for Schoolyard Transformation</td>
<td>Sharon Gamson Danks</td>
<td>New Village Press</td>
<td>0976605481 ($41)</td>
<td></td>
</tr>
<tr>
<td>Childhood and Nature: Design principles for educators</td>
<td>David Sobel</td>
<td>Stenhouse Publishers</td>
<td>157110741X</td>
<td>$31</td>
</tr>
<tr>
<td>Cultivating Outdoor Classrooms</td>
<td>Nelson Eric</td>
<td>Redleaf Press</td>
<td>1605540250 ($51)</td>
<td></td>
</tr>
<tr>
<td>Ecological Literacy: Educating Our Children for a Sustainable</td>
<td>Michael K. Stone, Zenobia Barlow</td>
<td>Sierra Club Books</td>
<td>1578051533 ($87 Amazon.ca)</td>
<td></td>
</tr>
<tr>
<td>I Love Dirt!: 52 Activities to Help You and Your Kids Discover</td>
<td>Jennifer Ward, Richard Louv, Susie</td>
<td>Roost Books</td>
<td>1590305353 ($15)</td>
<td></td>
</tr>
<tr>
<td>Moving the Classroom Outdoors: Schoolyard-enhanced Learning in</td>
<td>Herbert W Broda</td>
<td>Stenhouse Publishers</td>
<td>1571107916 ($32 Amazon.ca)</td>
<td></td>
</tr>
</tbody>
</table>


WEBSITES FOR TEACHERS

Manitoba Teachers’ Society – Environmental Education
www.mbteach.org/library/Archives/SpecialSections/10_ENVIRO-ED/index.html


http://classroominnature.weebly.com/

http://www.nutrientsforlife.ca/learning-materials/engaging-students/ Butterfly & Pollinator’s Garden

KidsGardening.org

KidsGardening.org has been a leading resource for school and youth gardening since 1982. They create opportunities for kids to learn through the garden, engaging their natural curiosity and wonder by providing inspiration, know-how, networking opportunities, and additional educational resources. They believe that learning through gardening should be an indispensable part of children’s education and personal development. Learning through gardening creates generations of kids connected to their food and community and engaged in nurturing a healthy planet.

The KidsGardening.org website has lots of information, including detailed lessons plans (www.kidsgardening.org/lesson-plans/) on various topics:
- Insect Safari
- Eat A Rainbow
- Growing Garden Companions
- Journey to the Center of a Seed
- Lettuce Be Healthy
- Three Sisters Garden
- Planning a Pollinator Garden
- Be a Bee
- Plants in Space
- Soil Texture & Composition
- The Plant-Soil Relationship

BOOKS FOR STUDENTS


*Prices according to chapters.indigo.ca on-line price unless otherwise specified. Taxes not included.*
APPENDIX E: VEGETABLE GARDEN QUOTES

Scenario One
Quote from Urban Seedling

Scenario Two
Quote from Microhabitat

Scenario Three
Quote from Coop Bioma
COOPÉRATIVE BIOMA

4598, rue Jeanne-Mance,
Tél. 438-931-2289
coopbioma@gmail.com
www.coopbioma.com

Nom : Dunrae School/Pietro Gasparri
Adresse : 235, Avenue Dunrae Mont-Royal
Tél : 
Courriel : pietro.gasparrini@concordia.ca
No : CB-1608-046
Date : 26/08/2016

<table>
<thead>
<tr>
<th>Description</th>
<th>Montant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom du projet : Garden construction and plantation</td>
<td></td>
</tr>
<tr>
<td><strong>Main d'œuvre</strong></td>
<td>Nombre d'heures</td>
</tr>
<tr>
<td>Horticulteur</td>
<td>40</td>
</tr>
<tr>
<td>Horticulteur</td>
<td>40</td>
</tr>
<tr>
<td>Coordination</td>
<td>12</td>
</tr>
<tr>
<td><strong>Matériaux</strong></td>
<td>Qté</td>
</tr>
<tr>
<td>Raised beds 10' x 3.5' x 2'</td>
<td>9</td>
</tr>
<tr>
<td>Geo-textile</td>
<td>30</td>
</tr>
<tr>
<td>Garden soil</td>
<td>20</td>
</tr>
<tr>
<td>Hardwood mulch</td>
<td>12</td>
</tr>
<tr>
<td>Compost</td>
<td>30</td>
</tr>
<tr>
<td>Organic Fertilisers</td>
<td>2</td>
</tr>
<tr>
<td>Straw bales</td>
<td>8</td>
</tr>
<tr>
<td>Fruit trees and shrubs</td>
<td>1</td>
</tr>
<tr>
<td>Perennials</td>
<td>1</td>
</tr>
<tr>
<td>Annuals</td>
<td>1</td>
</tr>
<tr>
<td>Seeds (pollinator species)</td>
<td>1</td>
</tr>
<tr>
<td>Mushroom innoculation</td>
<td>1</td>
</tr>
<tr>
<td>Hose - 50' + reel</td>
<td>1</td>
</tr>
<tr>
<td>key for water acess</td>
<td>1</td>
</tr>
<tr>
<td>Rental rotary-hoe</td>
<td>1</td>
</tr>
<tr>
<td>Cedar stakes (vegies)</td>
<td>20</td>
</tr>
<tr>
<td>Tree supports + protection</td>
<td>7</td>
</tr>
<tr>
<td>Garden tool set: kids</td>
<td>10</td>
</tr>
<tr>
<td>Garden tool set: adults</td>
<td>1</td>
</tr>
<tr>
<td>Description</td>
<td>Quantity</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Wheelbarrow</td>
<td>1</td>
</tr>
<tr>
<td>Garden shed</td>
<td>1</td>
</tr>
<tr>
<td>Numerical padlock</td>
<td>1</td>
</tr>
<tr>
<td>Rain barrel with tap</td>
<td>1</td>
</tr>
<tr>
<td>Guttering + down pipe</td>
<td>1</td>
</tr>
<tr>
<td>Watering cans</td>
<td>3</td>
</tr>
<tr>
<td>Irrigation system</td>
<td>1</td>
</tr>
<tr>
<td>Delivery 1</td>
<td>3</td>
</tr>
<tr>
<td>Delivery 2</td>
<td>3</td>
</tr>
<tr>
<td>Transport</td>
<td>8</td>
</tr>
</tbody>
</table>

**Sous-total**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$12,924.70</td>
</tr>
</tbody>
</table>

**No TPS :806231782 RT 0001**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No TVQ :1222503112 TQ 0001</td>
<td>$1,289.24</td>
</tr>
</tbody>
</table>

**Total à payer**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$14,860.17</td>
</tr>
</tbody>
</table>

Description des travaux:
Delimitation and preparation of the space. Installation of raised garden beds + shed, creation of in-ground garden beds, paths etc, placement of materials, plantation.

Signature:
**SOUMISSION**

Cooperative Bioma  
**4598, rue Jeanne-Mance,**  
Tél. 438-931-2289  
coopbioma@gmail.com  
www.coopbioma.com  

<table>
<thead>
<tr>
<th>Description</th>
<th>Montant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nom :</strong></td>
<td>Dunrae School/Pietro Gasparrini</td>
</tr>
<tr>
<td><strong>Adresse :</strong></td>
<td>235, Avenue Dunrae Mont-Royal</td>
</tr>
<tr>
<td><strong>Tél :</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Courriel :</strong></td>
<td><a href="mailto:pietro.gasparrini@concordia.ca">pietro.gasparrini@concordia.ca</a></td>
</tr>
<tr>
<td><strong>No :</strong></td>
<td>CB-1608-047</td>
</tr>
<tr>
<td><strong>Date :</strong></td>
<td>26/08/2016</td>
</tr>
</tbody>
</table>

| Description des travaux: | 
| Watering, weeding, general care of vegetables and fruits. Manage harvest. Closure for winter. 22 visits: april - september. 1 visit October to close for winter |
| **Sous-total** | $1,821.00 |

<table>
<thead>
<tr>
<th>Matériaux</th>
<th>Qté</th>
<th>PU</th>
<th>Montant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost</td>
<td>20</td>
<td>3.5</td>
<td>$70.00</td>
</tr>
<tr>
<td>Organic fertiliser</td>
<td>2</td>
<td>35</td>
<td>$70.00</td>
</tr>
<tr>
<td>Cord</td>
<td>1</td>
<td>8</td>
<td>$8.00</td>
</tr>
<tr>
<td>Baking soda</td>
<td>1</td>
<td>5</td>
<td>$5.00</td>
</tr>
<tr>
<td>Transport</td>
<td>20</td>
<td>15</td>
<td>$300.00</td>
</tr>
</tbody>
</table>

| **Signature:** |
| **Total à payer** | $2,093.69 |

No TPS :806231782 RT 0001 5.00% $91.05  
No TVQ :1222503112 TQ 0001 9.975% $181.64
SOUMISSION

Cooperative Bioma
4598, rue Jeanne-Mance,
Tél. 438-931-2289
coopbioma@gmail.com
www.coopbioma.com

Nom : Dunrae School/Pietro Gasparrini
Adresse : 235, Avenue Dunrae Mont-Royal
Tél : 
Courriel : pietro.gasparrini@concordia.ca
No : CB-1608-048
Date : 26/08/2016

<table>
<thead>
<tr>
<th>Description</th>
<th>Montant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom du projet :</td>
<td>School Workshops</td>
</tr>
<tr>
<td>Main d'œuvre</td>
<td>Nombre d'heures</td>
</tr>
<tr>
<td>Horticulteur</td>
<td>16</td>
</tr>
<tr>
<td>Matériaux</td>
<td>Qté</td>
</tr>
<tr>
<td>Potting soil</td>
<td>9</td>
</tr>
<tr>
<td>Pots + saucers</td>
<td>1</td>
</tr>
<tr>
<td>Seeds</td>
<td>9</td>
</tr>
<tr>
<td>Transport</td>
<td>4</td>
</tr>
</tbody>
</table>

Description des travaux: 9 workshops over 3 days.

Sous-total: $ 870.00

No TPS :806231782 RT 0001  5.00%  $ 43.50
No TVQ :1222503112 TQ 0001  9.975%  $ 86.78

Signature:

Total à payer: $ 1,000.28
MICROHABITAT OFFERS CITY DWELLERS THE OPPORTUNITY TO EAT BETTER WHILE CONTRIBUTING TO THE WELL-BEING OF THEIR COMMUNITY.

WHAT IS MICROHABITAT?
Montreal has many acres of potential productive spaces that are currently underutilized. At Microhabitat, we offer sustainable and innovative solutions for more efficient and pleasing use of space. We are committed to improving biodiversity within conventional urban settings. With our turnkey gardening service, we create for you an ecological ecosystem so that you can enjoy personalized food production.

Microhabitat is a first step towards a sustainable lifestyle in the comfort of your own space. Fresh produce available to you, steps away from your home or office!
• We plan and customize your garden with your favorite selection of fruits, vegetables, herbs and edible flowers. Choose from our wide array of ecological, rustic and tasty varieties!
• We install the garden and our automated watering system. We can build your garden in a yard, on a balcony or on a rooftop.
• We maintain the garden on a weekly basis
• We harvest and deliver all the products to your doorstep or your office desk

![Image of a person planting in a garden]

REQUIREMENTS FOR DUNRAE GARDEN’S YARD TRANSFORMATION

DUNRAE GARDEN PROVIDES:

1. The installation of a fence around the garden to protect it from the soccer fields. The fence will also serve as a trellis for vines.
2. An efficient functioning of the watering system. The school must ensure permanent water access to the garden all season long: A sufficiently long watering hose and a cable protector to prevent breakage from traffic.
3. Access to a storage room or shed all season long for Microhabitat’s maintenance materials and tools.

MICROHABITAT SERVICE & COSTS

• Urban garden planning & supply of the material
• Planting and seeding of edible produce
• Garden maintenance (watering, plant check-up, etc.)
• Harvesting of the produce
• Hibernation of the garden
• Up to 500 pots can be installed in the “La campagne” area of the yard
• Every pot allows for 3 sq. ft. of cultivable surface

Each 30 gallon pot is priced at $100 in the first year and $50 of recurring costs thereafter. Fruit trees sell for $100. All prices shown are before taxes.
ADVANTAGES OF MICROHABITAT'S GARDENS

Fresh and clean
Microhabitat gardens follow strict ecological principles of food production free from artificial fertilizers, pesticides, fungicides or herbicides.

Environmental benefits
Vegetation can reduce the heat island effect in dense urban areas. It can also help reduce and slow stormwater runoff in the urban environment. It is a great way to rebuild ecosystems in

Environmentally friendly
Our gardens decrease energy waste associated with the transport of agricultural products and other forms of pollution. The gardens beautify the city's urban landscape and enhance the biodiversity of otherwise unused space.

A step toward sustainability
Microhabitat’s customers can reap the benefits of a sustainable practice by producing and harvesting their own fresh produce, herbs, edible flowers and honey.

WORKSHOPS

1. The production of seedling
   The objective of this workshop is to teach the golden rules of seedling production.

2. Planting
   This workshop focuses on the crucial steps of preparing and installing the garden. If students first take the seedling workshop they will able to plant the young shoots they produced.

3. Harvesting
   This workshop helps students identify clearly the right time to harvest each variety. They will learn how to maintain a healthy garden after the first harvest

Price per workshop 60$ (+ taxes). Each workshop includes a comprehensive PDF booklet.
APPENDIX F: ARBORETUM TREE LIST
**ADRESSE** | **EXPÉDIER À**
--- | ---
M. Pietro Gasparrini C.I.H. | M. Pietro Gasparrini C.I.H.

---

**ESTIMATION 1032**

**DATE** 05/09/2016

**DATE D’EXPIRATION** 30/09/2016

<table>
<thead>
<tr>
<th>PRODUIT / SERVICE</th>
<th>QTÉ</th>
<th>TAUX</th>
<th>TAXE</th>
<th>MONTANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Érable argenté en contenant de 180 ml (10-25 cm) [Zone Lac/Rivière]</td>
<td>5</td>
<td>5,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>29,75</td>
</tr>
<tr>
<td>Chêne bicolore en contenant de 1 gallon (90-115 cm) [Zone Lac/Rivière]</td>
<td>3</td>
<td>19,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>59,85</td>
</tr>
<tr>
<td>Sureau du Canada en contenant de 1 gallon (90-115 cm) [Zone Lac/Rivière]</td>
<td>1</td>
<td>16,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>16,95</td>
</tr>
<tr>
<td>Orme rouge en contenant de 1 gallon (30-55 cm) [Zone Lac/Rivière]</td>
<td>1</td>
<td>13,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>13,95</td>
</tr>
<tr>
<td>Orme d’Amérique en contenant de 1 gallon (90-115 cm) [Zone Lac/Rivière]</td>
<td>1</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>17,95</td>
</tr>
<tr>
<td>Micocoulier occidental en contenant de 1 gallon (90-115 cm) [Zone Prairie]</td>
<td>2</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>35,90</td>
</tr>
<tr>
<td>Chêne à gros fruits en contenant de 1 gallon (90-115 cm) [Zone Prairie]</td>
<td>3</td>
<td>19,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>59,85</td>
</tr>
<tr>
<td>Érable à sucre en contenant de 1 gallon (90-115 cm) [Zone Forêt]</td>
<td>3</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>53,85</td>
</tr>
<tr>
<td>Bouleau à papier en contenant de 1 gallon (90-115 cm) [Zone Forêt]</td>
<td>3</td>
<td>16,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>50,85</td>
</tr>
<tr>
<td>Frêne blanc en contenant de 1 gallon (90-115 cm) [Zone Forêt]</td>
<td>3</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>53,85</td>
</tr>
<tr>
<td>Bouleau jaune en contenant de 1 gallon (90-115 cm) [Zone Montagne]</td>
<td>3</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>53,85</td>
</tr>
<tr>
<td>PRODUIT / SERVICE</td>
<td>QTÉ</td>
<td>TAUX</td>
<td>TAXE</td>
<td>MONTANT</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>-----------------</td>
<td>---------</td>
</tr>
<tr>
<td>Hêtre à grandes feuilles en contenant de 180 ml (10-25 cm) [Zone Montagne]</td>
<td>4</td>
<td>8,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>35,80</td>
</tr>
<tr>
<td>Cerisier tardif en contenant de 180 ml (10-25 cm) [Zone Montagne]</td>
<td>2</td>
<td>6,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>13,90</td>
</tr>
<tr>
<td>Chêne rouge en contenant de 1 gallon (90-115 cm) [Zone Montagne]</td>
<td>5</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>89,75</td>
</tr>
<tr>
<td>Genévrier de Virginie en contenant de 1 gallon (60-85 cm) [Zone Montagne]</td>
<td>1</td>
<td>18,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>18,95</td>
</tr>
<tr>
<td>Pin blanc en contenant de 1 gallon (60-85 cm) [Zone Montagne]</td>
<td>3</td>
<td>14,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>44,85</td>
</tr>
<tr>
<td>Sorbier décoratif en contenant de 1 gallon (90-115 cm) [Zone Montagne]</td>
<td>2</td>
<td>17,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>35,90</td>
</tr>
<tr>
<td>Sumac vinaigrier en contenant de 1 gallon (90-115 cm) [Zone Jardin]</td>
<td>3</td>
<td>16,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>50,85</td>
</tr>
<tr>
<td>Bouleau flexible en contenant de 1 gallon (90-115 cm) [Zone Terrain de soccer]</td>
<td>7</td>
<td>20,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>146,65</td>
</tr>
<tr>
<td>Mélèze laricin en contenant de 1 gallon (90-115 cm) [Zone Terrain de soccer]</td>
<td>7</td>
<td>16,95</td>
<td>TPS/TVQ QC - 9,975</td>
<td>118,65</td>
</tr>
</tbody>
</table>

- Nous suggérons le sureau du Canada (sambucus canadensis), au lieu du sureau pubescent (sambucus pubens) qui est toxique si ingéré. Il pourrait d'ailleurs être judicieux de planter plus de sureaux du Canada en bordure du petit cours d'eau, puisque ceux aiment bien l'eau. De plus, ils produisent d'excellents petits fruits. Il pourrait y en avoir également au pied de l'orme d'Amérique dans la zone Rivière ; cela les aide à rester en santé (réf. : Maladie hollandaise de l'orme).

**TOTAL PARTIEL** 1 001,90
GST À 5% 50,10
QST À 9,975% 99,93

**TOTAL** 1 151,93 $
APPENDIX G: SCHOOLYARD NATURALIZATION PROJECT PHASE 1

The following is Phase 1 of the landscape design proposal for the Schoolyard Naturalization Project prepare by Luc Osta, Landscape Architect, StudioCAPT Inc.(7320 place Trévi, Brossard, QC Canada J4W-3C8, www.studiocapt.com).
AMÉNAGEMENT PROPOSÉ

Clôture proposé

LÉGENDE

Limites de propriété
Surface asphaltée
Surface gazonnée
Arbres existants
APPENDIX H: SCHOOLYARD NATURALIZATION PROJECT PHASE 2

The following is Phase 2 of the landscape design proposal for the Schoolyard Naturalization Project prepare by Luc Osta, Landscape Architect, StudioCAPT Inc.(7320 place Trévi, Brossard, QC Canada J4W-3C8, www.studiocapt.com).
AMÉNAGEMENT PROPOSÉ

Clôture et terrains de soccer

LÉGENDE

- Limites de propriété
- Surface asphaltée
- Surface gazonnée
- Arbres existants
APPENDIX I: PERIMETER FENCING OPTIONS

Omega II Fencing Systems (http://www.omegatwo.com/) was contacted as an alternative option to the chain link fencing for the perimeter fence that would be installed in front of the school.

Only 1 quote was requested given it was solely to estimate the cost. This section of fence in question is 413 linear feet and is being proposed at 4 feet high.

The Omega II Fencing System quote is $19,332.64 for:

- 413 linear feet of fencing – style ELITE
- 4 foot high
- 1 pedestrian gate
- 1 vehicle gate

The quote and details regarding the product are included.

This quote serves solely to estimate the cost of an alternative to the chain link fence proposed by the landscape architect.
# Soumission: 33131

**Date:** 01-09-2016  
**Expire le:** 01-10-2016

**Soumissionné à:** O-DUN000  
Pietro Gasparrini  
Dunrae Gardens Elementary School  
235, Avenue Dunrae  
Mont-Royal QC  
H3P 1T5  
Canada  
Tél.: 514-484-2424

**Livré à:**  
Dunrae Gardens Elementary School  
235, Avenue Dunrae  
Mont-Royal QC  
H3P 1T5  
Tél: 514484-2424

**Mode d'exp:** CUEILLETTE  
**Termes:** Paiement à la commande

<table>
<thead>
<tr>
<th>Quantité</th>
<th>No. Pièce</th>
<th>Description</th>
<th>Prix Unitaire</th>
<th>Escompte</th>
<th>Prix net</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>C-EL48BK</td>
<td>PANNEAU ELITE 4'HX8'3&quot;L NOIR</td>
<td>130,79</td>
<td></td>
<td>6 147,13</td>
</tr>
<tr>
<td>45</td>
<td>C-P11GA3X7BK</td>
<td>POTEAU 11GA 3&quot;X3&quot;X7' NOIR</td>
<td>85,03</td>
<td></td>
<td>3 826,35</td>
</tr>
<tr>
<td>45</td>
<td>C-CAP3ALBK</td>
<td>POST CAP 3&quot;x3&quot;ALUMINUM BLACK</td>
<td>6,49</td>
<td></td>
<td>292,05</td>
</tr>
<tr>
<td>282</td>
<td>C-CUNI3KBK</td>
<td>3&quot; UNIVERSAL COLLAR BRACKET ATTACHEMENT BLACK KIT</td>
<td>8,20</td>
<td></td>
<td>2 312,40</td>
</tr>
<tr>
<td>1</td>
<td>C-GPM30BK</td>
<td>BATTANT M30 48 &quot;OUV X 48 &quot;H AVEC PENTURE À RESSORTS - NOIR</td>
<td>854,40</td>
<td></td>
<td>854,40</td>
</tr>
<tr>
<td>2</td>
<td>C-GPM30DBK</td>
<td>BATTANT M30 DOUBLE 120 &quot;OUV X 48 &quot;H AVEC PENTURE À RESSORTS - NOIR</td>
<td>1 658,60</td>
<td></td>
<td>3 317,20</td>
</tr>
<tr>
<td>8</td>
<td>C-CUNI3KBK</td>
<td>3&quot; UNIVERSAL COLLAR BRACKET ATTACHEMENT BLACK KIT</td>
<td>8,14</td>
<td></td>
<td>65,12</td>
</tr>
<tr>
<td>6</td>
<td>C-P11GA3X7BK</td>
<td>POTEAU 11GA 3&quot;X3&quot;X7' NOIR</td>
<td>0,00</td>
<td></td>
<td>0,00</td>
</tr>
<tr>
<td>6</td>
<td>C-CAP3ALBK</td>
<td>POST CAP 3&quot;x3&quot;ALUMINUM BLACK</td>
<td>0,00</td>
<td></td>
<td>0,00</td>
</tr>
<tr>
<td>5</td>
<td>C-PENSPRING2</td>
<td>HINGE WITH SPRING FOR DOOR 2&quot; (KIT 2) BLACK</td>
<td>0,00</td>
<td></td>
<td>0,00</td>
</tr>
<tr>
<td>1</td>
<td>C-HDWG3SBK</td>
<td>SINGLE GATE HARDWARE 3&quot; POST BLACK</td>
<td>0,00</td>
<td></td>
<td>0,00</td>
</tr>
<tr>
<td>2</td>
<td>C-HDWG3DBK</td>
<td>QUINCAILLERIE NOIR PORTE DOUBLE POT 3&quot;</td>
<td>0,00</td>
<td></td>
<td>0,00</td>
</tr>
</tbody>
</table>
# Soumission: 33131

**Date:** 01-09-2016  
**Expire le:** 01-10-2016  

**Soumissionné à:**  
O-DUN000  
Pietro Gasparrini  
Dunrae Gardens Elementary School  
235, Avenue Dunrae  
Mont-Royal QC  
H3P 1T5  
Canada  
Tél.: 514-484-2424

**Livré à:**  
Dunrae Gardens Elementary School  
235, Avenue Dunrae  
Mont-Royal QC  
H3P 1T5  
Tél: 514484-2424

**Mode d'exp:** CUEILLETTE  
**Termes:** Paiement à la commande

<table>
<thead>
<tr>
<th>Quantité</th>
<th>No. Pièce</th>
<th>Description</th>
<th>Prix Unitaire</th>
<th>Escompte</th>
<th>Prix net</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>PRIX BUDGÉTAIRES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BASÉ SUR L’INFORMATION FOURNIT PAR LE CLIENT : DOUBLE TIGE ELITE - 413PL - 4’H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>COULEUR : Noir de sécurité Polyester RAL9004 (30% Lustre) (Ref.: Protech US511N6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EXPÉDITION: CUEILLETTE au 2800 Francis-Hughes, Laval, H7L 3M4 (transport van fermé sur demande)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRODUCTION: 6 semaines Approximatif (ne comprend pas la période des Fêtes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.V.P CONTACTER LE CLIENT UNE FOIS LA COMMANDE EST PRÊTE:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTACT: Pietro Gasparrini TÉL. : 5148482424 ext. 5915 OU Mobile: 5147798518</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*IMPORTANT Omega n’est pas responsable des modèles, quantités et dimensions commandées. Merci, Debbie poste 2251</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Poids Net : 3 691,83  
Escompte : 0,00 $  

<table>
<thead>
<tr>
<th>SOUS TOTAL</th>
<th>T.P.S.</th>
<th>T.V.Q.</th>
<th>T.V.H.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 814,65$</td>
<td>840,73$</td>
<td>1 677,26$</td>
<td>0,00$</td>
<td>19 332,64$</td>
</tr>
</tbody>
</table>
# Soumission: 33131

Date: 01-09-2016

Expire le: 01-10-2016

Soumissionné à:
O-DUN000

Pietro Gasparrini
Dunrae Gardens Elementary School
235, Avenue Dunrae
Mont-Royal QC
H3P 1T5
Canada

Tél.: 514-484-2424

Livré à:
Dunrae Gardens Elementary School
235, Avenue Dunrae
Mont-Royal QC
H3P 1T5

Tél: 514484-2424

Mode d'exp: CUEILLETTE

Termes: Paiement à la commande

<table>
<thead>
<tr>
<th>Quantité</th>
<th>No. Pièce</th>
<th>Description</th>
<th>Prix Unitaire</th>
<th>Escompte</th>
<th>Prix net</th>
</tr>
</thead>
</table>

Metaltech-Omega n'est pas responsable des modèles, quantités et dimensions commandées.

Livraison

- Le délai de livraison est approximatif et sujet à changement selon la réception du bon de commande, l'approbation des dessins et l'acceptation du crédit.
- Tous les envois seront livrés dans un camion fermé (maximum 53 pieds de long). Des frais s'appliqueront pour une livraison avec remorque plateforme (flatbed).
- Un délai de 1 heure est alloué pour décharger un camion plein (FTL) et 30 minutes pour décharger un LTL (surcharge applicable si le temps alloué est dépassé).
- Le client est responsable du déchargement du camion avec son propre équipement.
- Dans l'éventualité où Metaltech-Omega devrait entreposer plus de 30 jours une commande prête à être expédiée ou prête pour cueillette, des frais d'entreposage mensuels (équivalent à 2% de la valeur de la commande) seront facturés.

Frais de restockage

- Des frais de restockage de 30 % sont applicables pour le retour de marchandise régulières seulement.
- Les frais de transport de marchandises retournées sont la responsabilité du client.
- Aucune annulation de commande ou retour de produits fabriqués sur mesure ne sera accepté.

Approuvé par: ___________________________  Signé par: ___________________________  Date: ____________
ALUMINUM CAP

SECTION A-A
STANDARD HINGE
SPACING : 2-1/4"±1"

DROP BAR

SECTION B-B
PANEL & FRAME

PRE-GALV SQUARE TUBE, 1.5" (38mm)
WIDTH 8' AND LESS -> 16GA
WIDTH 8' AND MORE -> 11GA

PRE-GALV SQUARE TUBE, 2" (50 mm)
HEIGHT 7' AND LESS -> 16GA
HEIGHT 7' AND MORE -> 11GA

EXTERIOR VIEW
- PANEL CENTERED IN FRAME

NOTE:
THE DEPTH OF THE CONCRETE FOUNDATIONS MUST BE
ESTABLISHED ACCORDING TO REGULATIONS IN THE REGION WHERE
THE INSTALLATION IS CARRIED OUT. A MINIMUM DEPTH OF 1070 MM
(42 IN.) IS RECOMMENDED. THE RECOMMENDED FOUNDATION DIAMETER IS 200mm (8 IN.) FOR A COMMERCIAL SITE AND 152 MM (6 IN.) FOR RESIDENTIAL INSTALLATION. REGULATIONS OF THE REGION TAKES PRECEDENCE OVER THE SPECIFICATIONS MENTIONED ABOVE.

GATE POST DIMENSIONS

<table>
<thead>
<tr>
<th>PANEL (H)</th>
<th>OPENING</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot; &amp; 6&quot;</td>
<td>3' to 8'</td>
<td>3&quot; x 3&quot; 11ga</td>
</tr>
<tr>
<td>8&quot;</td>
<td>3' to 7'</td>
<td>3&quot; x 3&quot; 11ga</td>
</tr>
<tr>
<td>4&quot;</td>
<td>9' to 16'</td>
<td>4&quot; x 4&quot; 11ga</td>
</tr>
<tr>
<td>6&quot;</td>
<td>9' to 12'</td>
<td>4&quot; x 4&quot; 11ga</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8&quot; &amp; 9&quot;</td>
<td>6&quot; x 6&quot; 1/4*</td>
</tr>
<tr>
<td>6&quot;</td>
<td>13' to 30'</td>
<td>6&quot; x 6&quot; 1/4*</td>
</tr>
<tr>
<td>8&quot;</td>
<td>10' to 26'</td>
<td>6&quot; x 6&quot; 1/4*</td>
</tr>
</tbody>
</table>

SPRING HINGE
(Optional)
SPACING : 1"±1/2"

NOTE:
GATE Post Dimensions

- PANEL (H) OPENING | POST
- 4" & 6" 3' to 8' | 3" x 3" 11ga
- 8" 3' to 7' | 3" x 3" 11ga
- 4" 9' to 16' | 4" x 4" 11ga
- 6" 9' to 12' | 4" x 4" 11ga
- 8" 8" & 9" | 6" x 6" 1/4*
- 6" 13' to 30' | 6" x 6" 1/4*
- 8" 10' to 26' | 6" x 6" 1/4*

NOTE:
THE DEPTH OF THE CONCRETE FOUNDATIONS MUST BE
ESTABLISHED ACCORDING TO REGULATIONS IN THE REGION WHERE
THE INSTALLATION IS CARRIED OUT. A MINIMUM DEPTH OF 1070 MM
(42 IN.) IS RECOMMENDED. THE RECOMMENDED FOUNDATION DIAMETER IS 200mm (8 IN.) FOR A COMMERCIAL SITE AND 152 MM (6 IN.) FOR RESIDENTIAL INSTALLATION. REGULATIONS OF THE REGION TAKES PRECEDENCE OVER THE SPECIFICATIONS MENTIONED ABOVE.
NOTE: The gate is reversible. It can be installed with the latch to the right or left.
La porte est réversible. Elle peut être installée avec le loquet à droite ou à gauche.
The depth of the concrete foundations must be established according to regulations in the region where the installation is carried out. A minimum depth of 1070 mm (42 in.) is recommended. The recommended foundation diameter is 200 mm (8 in.) for a commercial site and 152 mm (6 in.) for residential installation. Regulations of the region take precedence over the specifications mentioned above.
CONTRAT DE SERVICE

Montréal, le 21 août, 2016

“Alvéole” : ALVÉOLE, une société dûment constituée conformément aux lois du Québec, et ayant son siège social au 7154 St-Urbain #101, Montréal (Québec) H2S 3H5 ;

“Client” : ÉCOLE DUNRAE GARDENS, une école primaire située au 235 Dunrae Avenue, Ville Mont-Royal, QC H3P 1T5.

DESCRIPTION DU SERVICE

- Installation d’une ruche en location en juin 2017
- Composantes d’une ruche :
  - 1 colonie d’abeilles mellifères
  - 1 base apinovar
  - 3 hausses
  - 28 cadres
  - 1 entre-couvercle
  - 1 toit
- Inspections aux deux semaines pour contrôle sanitaire et vérification de la production de miel tout au cours de la saison apicole (juin à novembre)
- Tout le matériel apicole nécessaire fourni par Alvéole et remplacé en cas de bris
- L’extraction du miel sous les normes du MAPAQ (Miellerie Alvéole #NIM : 101078772)
- Remise entière de la collecte de miel
- Garantie d’un minimum de 10 kg de miel par ruche
- Mise en pot de votre miel (choix de pots disponible gratuitement)
- Traitement et nourrissage des colonies, si nécessaire
- Préparation et isolation des ruches pour l’hiver
- Ouverture et inspection des ruches au printemps
- Remplacement de la colonie dans le cas de mortalité provoqué par des causes génétiques, parasitaires ou environnementales
- Ruches enregistrées auprès du MAPAQ

ATELIERS INCLUS

- Un atelier théorique avec Alvéole entre février et mai : Pollinisation et rôle de l’abeille dans le maintien de notre écosystème, Apiculture et agriculture urbaine : l’importance de produire localement (1h)
- Un atelier pratique avec Alvéole (près de la ruche) : Biologie de l’abeille et organisation interne de la ruche (1h)
- Un atelier d’extraction du miel à l’école (1h)
SERVICES OPTIONNELS

- Design graphique d’étiquettes avec votre logo
- Impression et application d’étiquettes pour vos pots de miel
- Ateliers additionnels : 200$ pour chaque atelier additionnel de 1h (aucune limite sur la quantité d’élèves)

MANDAT
Du 1er juin 2017 au 31 mai 2018 (1 saison apicole)

PRIX
1 600$ par année

TAXES
Taxes en sus : TPS (5%) / TVQ (9.975%)

FACTURATION
Dépôt de 50% payable sur réception pour réserver les ruches
Solde payable avant le 1er juin 2017
ALVÉOLE

Signature : ________________________________
Nom : Alexandre McLean
Poste : Co-fondateur
Tél : (438) 402 2246
Courriel : info@alveole.buzz

DUNRAE GARDENS

Signature : ________________________________
Nom :
Poste :
Tél :
Courriel :
APPENDIX K: COST ESTIMATE

The following is the landscape design cost estimate for the Schoolyard Naturalization Project prepare by Luc Osta, Landscape Architect, StudioCAPT Inc.(7320 place Trévi, Brossard, QC Canada J4W-3C8, [www.studiocapt.com](http://www.studiocapt.com)).
### Estimation des coûts Dunrae-Gardens

<table>
<thead>
<tr>
<th>ÉLÉMENT</th>
<th>PRIX / UNITÉ</th>
<th>UNITÉ</th>
<th>QT</th>
<th>UNITÉ</th>
<th>SOUS-TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SURFACE D’ASPHALTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface existante</td>
<td>prix/pi²</td>
<td>29490</td>
<td>pi²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface projetée</td>
<td>prix/pi²</td>
<td>29359</td>
<td>pi²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrait d’asphalte</td>
<td>2.50$</td>
<td>7016</td>
<td>pi²</td>
<td></td>
<td>17,540$</td>
</tr>
<tr>
<td>Ajout d’asphalte</td>
<td>8.00$</td>
<td>7041</td>
<td>pi²</td>
<td></td>
<td>56,328$</td>
</tr>
<tr>
<td>Bordures de béton</td>
<td>4.00$</td>
<td>1457</td>
<td>piL</td>
<td></td>
<td>5,828$</td>
</tr>
<tr>
<td>Marquage au sol (lignes et jeux)</td>
<td>3,500.00$</td>
<td>1</td>
<td>unit.</td>
<td></td>
<td>3,500$</td>
</tr>
<tr>
<td><strong>TOTAL PARTIEL :</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 TERRAIN DE SOCCER (SURFACE DE GAZON)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface à niveler</td>
<td>0.35$</td>
<td>53760</td>
<td>pi²</td>
<td></td>
<td>18,816$</td>
</tr>
<tr>
<td>Ensemencement hydraulique</td>
<td>0.25$</td>
<td>53760</td>
<td>pi²</td>
<td></td>
<td>13,440$</td>
</tr>
<tr>
<td>Buts et lignage</td>
<td>prix/unit.</td>
<td></td>
<td>unit.</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL PARTIEL :</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 CLÔTURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longueur existante</td>
<td>prix/piL</td>
<td>902</td>
<td>piL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longueur à retirer</td>
<td>2.50$</td>
<td>902</td>
<td>piL</td>
<td></td>
<td>2,255$</td>
</tr>
<tr>
<td>Longueur de 4’ à ajouter</td>
<td>12.00$</td>
<td>806</td>
<td>piL</td>
<td></td>
<td>9,672$</td>
</tr>
<tr>
<td>Longueur de 10’ à ajouter</td>
<td>30.00$</td>
<td>724</td>
<td>piL</td>
<td></td>
<td>21,720$</td>
</tr>
<tr>
<td><strong>TOTAL PARTIEL :</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 VÉGÉTAUX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbres existants</td>
<td>prix/unit.</td>
<td>12</td>
<td>unit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbres projetés</td>
<td>350.00$</td>
<td>60</td>
<td>unit.</td>
<td></td>
<td>21,000$</td>
</tr>
<tr>
<td>Panneaux explicatifs</td>
<td>prix/unit.</td>
<td>72</td>
<td>unit.</td>
<td></td>
<td>0$</td>
</tr>
<tr>
<td>Plates-bandes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbustes et vivaces (superficie)</td>
<td>2.50$</td>
<td>18176</td>
<td>pi²</td>
<td></td>
<td>45,440$</td>
</tr>
<tr>
<td>Végétaux potagers</td>
<td>2.50$</td>
<td>270</td>
<td>pi²</td>
<td></td>
<td>675$</td>
</tr>
<tr>
<td>Description</td>
<td>Prix/pi²</td>
<td>Pi²</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
<td>-----</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terreau de plantation</td>
<td>0.36</td>
<td>18176</td>
<td>6,499</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paillis</td>
<td>0.14</td>
<td>18176</td>
<td>2,493</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mychorises (élément enrichissant)</td>
<td>105.00</td>
<td>10</td>
<td>1,050</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL PARTIEL : 77,157$</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 CHEMIN D’ENTRÉE

<table>
<thead>
<tr>
<th>Description</th>
<th>Prix/pi²</th>
<th>Pi²</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface pavée</td>
<td>20.00</td>
<td>540</td>
<td>10,800</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL PARTIEL : 10,800$</strong></td>
</tr>
</tbody>
</table>

6 MOBILIER ET ACCESSOIRES

<table>
<thead>
<tr>
<th>Description</th>
<th>Prix/unit.</th>
<th>Unit.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports à vélo</td>
<td>516.00</td>
<td>4</td>
<td>2,064</td>
</tr>
<tr>
<td>Poubelles/recyclage</td>
<td>1,500.00</td>
<td>4</td>
<td>6,000</td>
</tr>
<tr>
<td>Bac à compost</td>
<td>400.00</td>
<td>3</td>
<td>1,200</td>
</tr>
<tr>
<td>Conteneurs à déchets</td>
<td></td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Pierres pour s’asseoir</td>
<td>50.00</td>
<td>50</td>
<td>2,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL PARTIEL : 11,764$</strong></td>
</tr>
</tbody>
</table>

7 CHEMINS PIÉTONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Prix/pi²</th>
<th>Pi²</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemins en poussière de pierre</td>
<td>3.00</td>
<td>2514</td>
<td>7,542</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL PARTIEL : 7,542$</strong></td>
</tr>
</tbody>
</table>

8 AGORA

<table>
<thead>
<tr>
<th>Description</th>
<th>Prix/unit.</th>
<th>Unit.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure en pierre et main-d’oeuvre</td>
<td></td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL PARTIEL : 12,000$</strong></td>
</tr>
</tbody>
</table>

**TOTAL : 268,362$**