

APPENDIX TWO

Performance Assessment

performance assessment

Performance indicators integrated with comparative benchmarking and target setting are used as an effective, forward-looking tool for measuring and assessing ecological, economic and social performance.

what is an indicator?

- Indicators offer a tool for measuring progress towards a goal.
- Indicators provide a common basis for comparison.
- Indicators provide a mechanism for setting desired targets.
- Indicators help to link detailed targets and actions with goals.

what is a target?

- Targets identify specifically what needs to be achieved (without specifying how to achieve it) by establishing the desired level of performance.
- Targets provide a way of defining and measuring needs and expectations.
- Targets function as guides rather than standards for the detailed design process.

what is benchmarking?

Benchmarking demonstrates what is possible compared to where we are and where we have been. It is an important tool to help the design team evaluate what might be possible. Based on the benchmark and foundation bulletin research conducted as part of the SUN Process, a benchmark scale was developed for each Emerald Hills Urban Village indicator to assist in setting a target. These targets were compared against the existing benchmarks and verified through the charrette process to ensure they were both plausible and challenging.

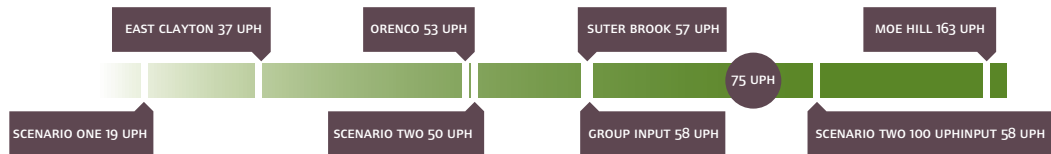
how was performance assessed?

Indicators measure performance towards the theme goals. An assessment of the performance of each Emerald Hills Urban Village indicator for each theme is presented on the following pages. The benchmark scale associated with each indicator comprises benchmarks for the three alternative scenarios detailed in Appendix Two, plus benchmarks for selected case studies. (Additional Case Study information is presented in Appendix Three.) The benchmarks are presented on a “shades of green” scale indicating the relative “greenness” of each benchmark. The target established for each indicator is clearly indicated on each benchmark scale.

The Performance Assessment of each indicator identifies the successes and shortcomings of the Master Concept Plan in achieving the Emerald Hills Urban Village performance targets. Shortcomings have been flagged as Detailed Design Tasks to be addressed as part of the integrated detailed design process.

performance assessment / land

indicator: residential density
measurement: du's/ha



target performance 75 uph

master concept plan performance 81 uph

assessment

Residential density in the master plan achieves slightly higher densities than those proposed. This increase is reflected throughout the site and achieved mainly through increased height.

indicator: commercial density
measurement: commercial building far



target performance 1.5 far

master concept plan performance 0.57 far

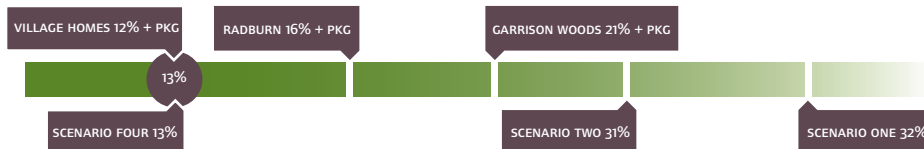
assessment

The master plan is currently significantly lower than the proposed target. The proposed target will be met by increasing commercial density over time. This will mainly be achieved by implementing infill strategies in Area VII, the commercial site, which is currently underdeveloped. An increase in home-based businesses, particularly in the southern residential areas, is also anticipated.

performance assessment / land

indicator: site coverage roads and parking

measurement: % development area allocated to roads and parking



target performance 13%

master concept plan performance 22%

assessment

Wider roads are used than proposed, causing an increase in area for roads. The paved portion of the North-South pedestrian-oriented street has been widened to allow for automobile travel and angled parking, adding additional area.

indicator: site coverage roads and parking

measurement: % project area for res and comm uses allocated to surface parking (nic on-street)



target performance leed-nd 20% (maximum) (with no individual lot greater than 2 acres)

master concept plan performance Requires more detailed design in order to estimate.

assessment

The large parking field located in Area VII, commercial parcel, negatively impacts this indicator. However, this has the potential to be overcome through the implementation of infill strategies.

performance assessment / natural habitat

indicator: significant habitat

measurement: % development area with native habitat protected from development



target performance 10%

master concept plan performance 2%

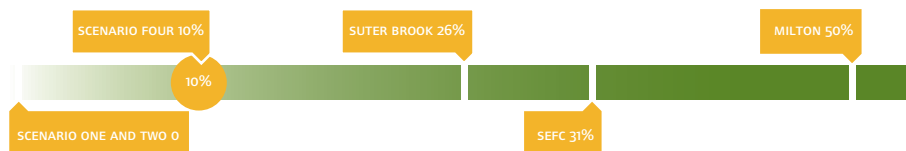
assessment

The major planning and design decision proposed to increase the significant habitat on site is the development of the east-west corridor as a natural corridor, linking open spaces off site to the east and west. The success of the strategy will be dependent upon attention to detail during design development. Specifically, to ensure that a more naturalised condition is maintained, the connectivity of this space should be protected by managing potential conflict with pedestrian crossings and adjacent uses. In addition, the specification of appropriate native plant species is essential.

Habitat area within the site can be also supplemented by native plantings in yards, public landscaping, parking areas and on green roofs, which will support populations of local birds and insects.

indicator: naturalized green space

measurement: % of land area restored to having significant ecological value



target performance 10%

master concept plan performance requires more detailed design in order to estimate.

assessment

The master plan incorporates the goal of creating multi-functional green spaces with ecological value. The central green space and connected green corridors serve as public gathering, recreation and food production spaces as well as pedestrian, species and stormwater movement corridors. The large residential building courtyards over underground parking have the opportunity to retain and evaporate significant amounts of stormwater.

However, Master Concept Plan performance towards the target is highly dependent on further design development, and cannot be measured until further details are available. The multi-functionality of the site's green spaces, particularly ecological functions such as habitat and stormwater management, require that spaces be highly connected and well designed; therefore, paved areas and pathways should be carefully considered.

performance assessment / water

indicator: stormwater runoff
measurement: effective impervious area



target performance 0%

master concept plan performance requires more detailed design in order to estimate.

assessment

The master plan stormwater management concept incorporates a natural drainage pattern of small basin areas and swales. The proposed matrix of pervious and impervious surfaces is an appropriate and valuable way to decrease effective impervious area. Actual performance cannot be determined until detailed design is completed, but moving towards the target will depend on a “whole site” overflow system and on a stormwater- oriented planting palette appropriate to the type and scale of development.

indicator: stormwater treatment
measurement: % runoff filtered / treated naturally



target performance 100%

master concept plan performance requires more detailed design in order to estimate.

assessment

The amount on runoff filtered on site is closely linked to the effective impervious surfaces. Actual performance cannot be determined until detailed design is complete, but in general achievement of the target will depend on a “whole site” overflow system, the incorporation of underground parking into the stormwater management plan, and a stormwater-oriented planting palette. A clear and common infiltration/ detention goal and corresponding Best Management Practice implementation should be articulated for each area of the site.

performance assessment / water

indicator: water use

measurement: % decrease in average potable water use



target performance 50%

master concept plan performance requires more detailed design in order to estimate.

assessment

Performance for this indicator cannot be measured until detailed design for individual buildings is conducted.

indicator: rainwater harvesting

measurement: % rainwater captured for reuse



target performance 50%

master concept plan performance requires more detailed design in order to estimate.

assessment

Performance for this indicator cannot be measured until detailed design for individual buildings is conducted.

performance assessment / carbon

indicator: solar orientation

measurement: % buildings with good solar orientation



target performance 80%

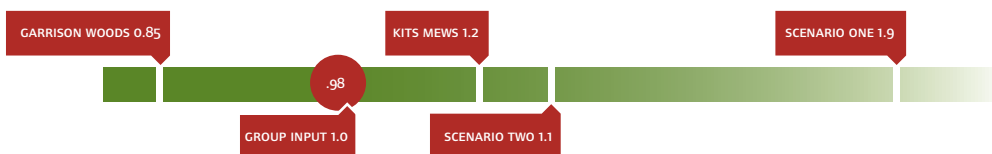
master concept plan performance requires more detailed design in order to estimate.

assessment

The building scale and orientation indicates a high potential for solar and daylighting strategies. It will be important that all buildings are designed to respond to these opportunities in order to meet the target.

indicator: energy efficiency

measurement: ratio exterior skin area to floor area



target performance 0.98

master concept plan performance requires more detailed design in order to estimate.

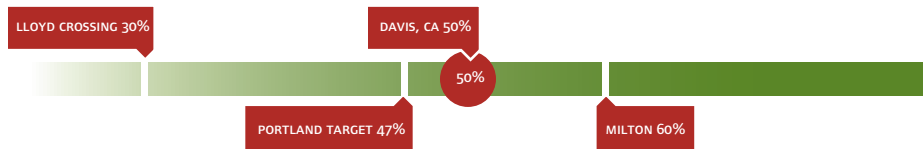
assessment

The building scale and form indicate a more efficient ratio of exterior skin area to floor area through the use of attached and stacked residential and commercial units. Further design development regarding building skin performance (for example, insulation values and glazing orientation and performance) is critical for improvements in energy efficiency.

performance assessment / carbon

indicator: tree canopy

measurement: % parking and road area shaded by trees



target performance 50%

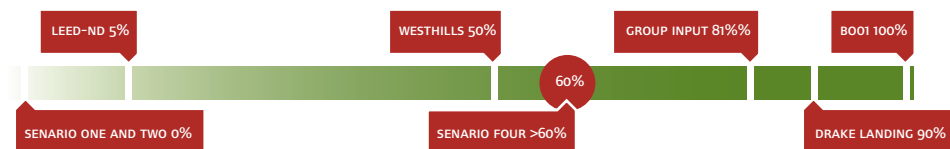
master concept plan performance requires more detailed design in order to estimate.

assessment

To be determined through future planning and design; however, the current master plan does not appear to differentiate planting type or density by exposed building face or open space orientation (north versus south, etc.). This will be an important consideration through design development.

indicator: renewable energy

measurement: % total energy consumed that is generated on-site from renewable sources



target performance 60%

master concept plan performance requires more detailed design in order to estimate.

assessment

While this indicator cannot be measured until additional feasibility analysis is conducted, the building scale and orientation indicates a high potential for solar and natural ventilation strategies. In addition, community energy system opportunities are very strong at proposed densities and building types, and should be further addressed through design development and implementation.

performance assessment / transport

indicator: sidewalk completeness
measurement: % roads with sidewalks



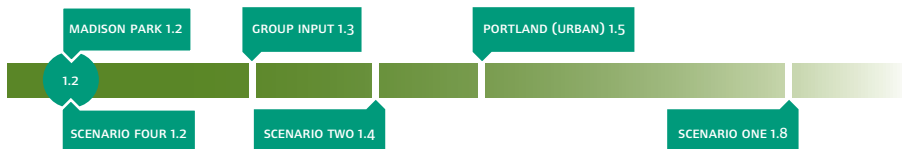
target performance 100%

master concept plan performance 100%

assessment

The master plan incorporates sidewalks into all northern and mid-site vehicular routes. Many of these sidewalks are connected by pedestrian crosswalks where they are interrupted by streets or parking. In the southern areas, vehicular access roads do not have sidewalks although pedestrian routes are incorporated along greenway corridors.

indicator: pedestrian route directness
measurement: index of street network density, sidewalk completeness, pedestrian route directness



target performance 1.2

master concept plan performance 1.3

assessment

General design strategies including the maintenance of north-south and east-west corridors as primary pedestrian routes, as well as incorporating residential and other uses that front onto pedestrian paths, are consistent throughout the site. Long, continuous building faces throughout the site decrease the frequency of pedestrian crossings, particularly east-west opportunities.

performance assessment / transport

indicator: transit proximity

measurement: average distance from all residents to closest transit stop



target performance 200m

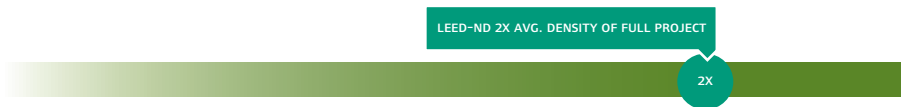
master concept plan performance requires strathcona county to determine precise location of transit stops.

assessment

By maintaining highest residential densities on the northern half of the site, the master plan places households near transit. In addition, pedestrian paths connecting to all perimeter roads provide direct routes to transit stops for pedestrians.

indicator: location efficiency

measurement: density near transit points



target performance 2x average density of village

master concept plan performance requires strathcona county to determine precise location of transit stops.

assessment

The highest intensity uses are situated on the northern half of the site nearest Emerald Drive, although Area VII still lacks “urban village” commercial intensity.

indicator: transit network extent

measurement: # buses stopping within 400m of major commercial uses and majority of residential uses



target performance 60

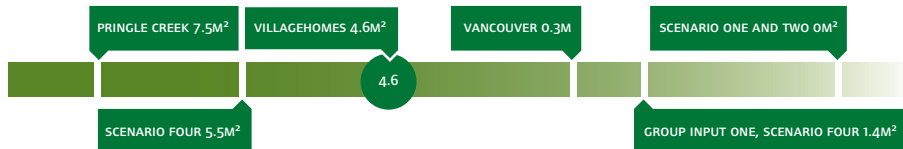
master concept plan performance requires strathcona county to determine precise location of transit stops.

assessment

High residential densities on the north half of the site enhance the viability of transit. Connections between the urban village and the hospital further encourage transit service.

performance assessment / food

indicator: area for growing food
measurement: % productive land/dwelling unit



target performance 4.6m²

master concept plan performance .68m²

assessment

Dedicated productive land is provided within the urban village through the provision of community gardens. These gardens are located in the central public green space where attention can be brought to the concept of on-site food production.

This measure does not include productive land area incorporated at the building scale distributed throughout the site. Providing space in detailed design at the building scale will help performance.

indicator: area for growing food
measurement: % dwellings within 200m of a community garden plot



target performance 100%

master concept plan performance 64%

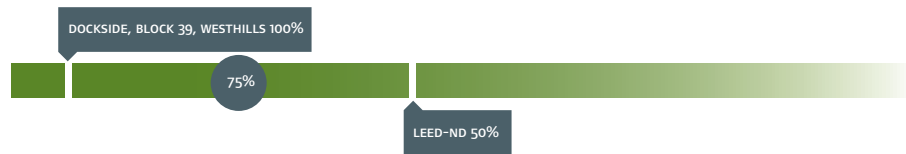
assessment

The master plan does not utilise a distributed dedicated community garden scheme but instead centralises community gardens in the large central open space. This decreases the number of people in close proximity to public garden plots, although this can be off-set by incorporating productive land at the building scale throughout the site.

performance assessment / materials

indicator: green building rating

measurement: % buildings designed and constructed in accordance with a green building rating system



target performance 75%

master concept plan performance requires more detailed design in order to estimate.

assessment

To be determined through detailed design.

performance assessment / waste

indicator: recycling facilities

measurement: % du's within 350m of centralized collection point



target performance 100%

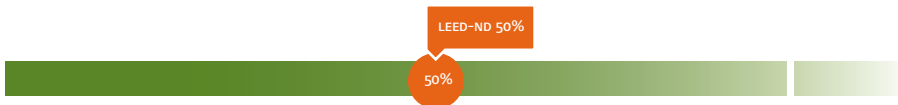
master concept plan performance requires more detailed design in order to estimate.

assessment

To be determined through future planning and design; this indicator is not currently within the scope of the master plan.

indicator: on-site composting

measurement: % organic waste composted on-site



target performance 50%

master concept plan performance requires more detailed design in order to estimate.

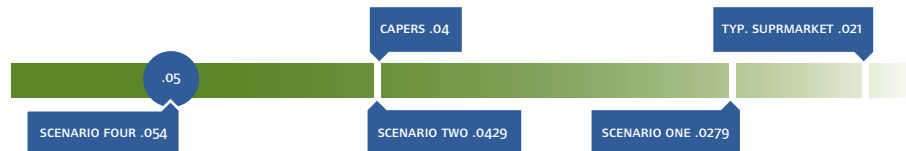
assessment

To be determined through future planning and design; this indicator is not currently within the scope of the master plan.

performance assessment / economy

indicator: diversity of commercial units

measurement: commercial frontage/commercial floor space



target performance 0.05/m²

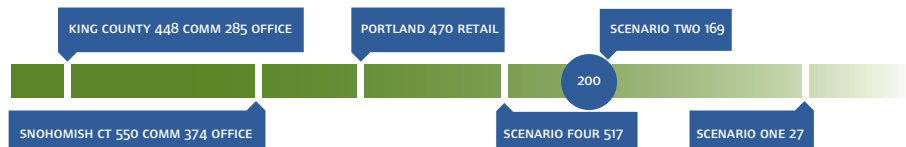
master concept plan performance requires more detailed design in order to estimate.

assessment

The provision of diverse types of commercial space including strip retail, live-work and office uses provide high opportunities for commercial diversification and densification over time. Office and retail floor areas should be designed with the appropriate level of flexibility to encourage diverse business types and tenures. Performance against this indicator could be improved through the provision of additional small-scale retail and services distributed throughout the Village.

indicator: employment density

measurement: #employees/ha land designated for employment uses



target performance 200

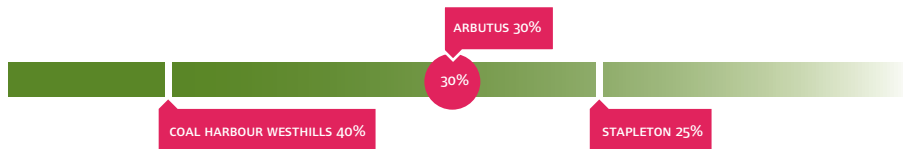
master concept plan performance 148

assessment

The master plan supplements low-density, single storey commercial uses with more intensive employment locations including stacked offices. Overall commercial density is slightly lower than proposed, but office uses have increased. The master plan refines the concept of live-work uses along the north-south corridor, adding further employment opportunities. Employment density has the potential to be enhanced over time through the gradual infill of the low-density commercial space in Area VII, which is currently underdeveloped. Additional appropriately-scaled service and employment can be accommodated within Areas IV and V, including enhanced opportunities for home-based employment.

performance assessment / well-being

indicator: public gathering spaces
measurement: % site area in park & open space



target performance 30%

master concept plan performance 12%

assessment

Increased areas of parks and open space, including the large central open space with community gardens and additional green corridors, maintain the spirit of proposed performance. Open space area is supplemented by the provision of semi-private apartment courts over underground parking as well as small private yards and “village greens” for southern residential areas. Continued development of smaller scale, distributed gathering spaces at the block and building scales, as well as support for desirable community programming for these spaces, will be important for implementation.

indicator: building set-backs
measurement: % facades within 25’ of pedestrian network /property line



target performance 80% (25')

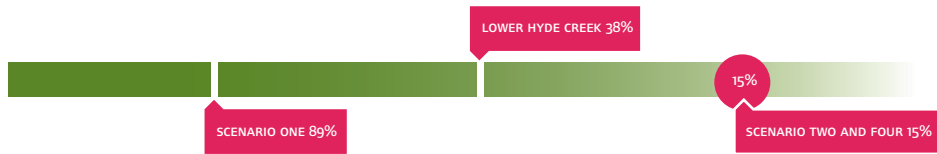
master concept plan performance 100%

assessment

Building scale and form in the master plan offer a high level of opportunity for enhanced public environments through decreased building setbacks. Successful design implementation will require a clear refinement of edges and boundaries between public and private spaces as well as more detailed development of streetscapes, especially along service streets in residential Areas IV and V.

performance assessment / well-being

indicator: ground-oriented housing
measurement: % households in ground-oriented housing units



target performance 15%
master concept plan performance 9%

assessment
 The master plan offers strong opportunities for the provision of ground-oriented housing in the urban village. Ground-oriented housing is appropriately sited along pedestrian greens and corridors

performance assessment / equity

indicator: housing types and tenures
measurement: simpson diversity index



target performance .26
master concept plan performance 0.44

assessment
 The master plan supplies a wide range of housing types and densities throughout the Village, including townhomes, live-work units, low and mid-rise apartments, high-rise apartments, life-lease seniors' residences and assisted living facilities.

performance assessment / culture

indicator: public art

measurement: presence of public art that addressess contextual issues and values (y/n)



target performance yes

master concept plan performance requires more detailed design work to determine.

assessment

The master concept plan offers strong opportunities for integrating public art throughout the Village. The detailed design will have to pay particular attention to small character spaces as well as the large open space areas in order to ensure this target is achieved.

indicator: access to cultural spaces

measurement: % of residential units within 400m walk of community centre



target performance 100%

master concept plan performance 100%

assessment

The developers are committed to incorporating a community / sustainability centre into one of the high-rise buildings that surrounds the Village heart. The location will be finalized once decisions have been made as to the nature and use of these buildings.