

Chapter 1: Monitoring and Evaluation

Chapter 10 outlines a comprehensive strategy to monitor the attainment of the MIP goals and objectives and the implementation of the Plan policies and actions. The implementation strategy provides the link between where we want to be in the future and how we will get there. How will we know if quality of life is improving on Maui? Some actions proposed will have perceivable impacts in the short-term, while others will



take much longer to develop, fund, and implement. The Monitoring and Evaluation Program described in this chapter establishes a strategy to track plan implementation, evaluate the effectiveness of policies and programs, monitor the quality of life on Maui, and allow for periodic program adjustments. This strategy includes objectives measures (performance indicators) to help implementing agencies in attaining planned outcomes.

GPAC RECOMMENDATION

The MIP performance/quality of life indicators will provide the foundation for the Monitoring and Evaluation Program. Specific benchmarks will be used to measure progress in the implementation of Maui Island Plan policies and actions. Physical, environmental, cultural, and socio-economic indicators will be used to assess the overall quality of life on Maui.

The General Plan Implementation Group (GPIG), which was described in detail in Chapter 9 will assist the Department of Planning with monitoring and evaluation of plan implementation and attainment of desired outcomes. The GPIG will fulfill this purpose by serving as a sounding board during the development of the Monitoring Report.

The Department of Planning will oversee the Monitoring and Evaluation Program, which will include the preparation of the Monitoring Report. The Department may add additional indicators as needed to track the impacts of plan implementation.

As mentioned in Chapter 9 [Part Two, Section 3 (Monitoring and Evaluation)], the annual progress report will be used in monitoring and evaluating the MIP implementation. In this report, selected performance indicators may be used as part of this monitoring and evaluation. However, the Department will incorporate a comprehensive assessment (including all indicators) into the Monitoring Report that will be conducted at least every five years; the intent is to report on the progress of plan implementation and provide a portrait of Maui's quality of life.

DEVELOPING BENCHMARKS AND INDICATORS

Benchmarks and indicators are the key components of the Monitoring and Evaluation Program. They are the informational tools that will monitor implementation progress and reveal the effectiveness of Maui Island Plan policies and actions.

BENCHMARKS TO MEASURE PROGRESS

Benchmarks will gauge implementation progress of individual Maui Island Plan programs and initiatives. Benchmarks will be developed for major proposed programs and actions such as the Transfer of Development Rights (TDR)/Purchase of Development Rights (PDR) program, updating the 1984 Cultural Resources Management Plan for Maui, preparing a Maui County Agricultural Development Plan, and amending the County Zoning Code. Benchmarks are established targets that track the phases of implementation. Benchmarks should be clear, realistic, include a time element, and be measurable if possible. For example, benchmarks for the TDR/PDR program might include: 1) Fully implement TDR/PDR program by 2010; 2) 1,000 acres of prime agricultural resource land preserved in perpetuity by 2015; 3) 5,000 acres of prime agricultural resource land preserved in perpetuity by 2030.

The Department of Planning will coordinate with necessary County agencies and program specialists to establish appropriate benchmarks for the major proposed programs and initiatives. The benchmarks will set following adoption of the Maui Island Plan and progress toward attaining the benchmarks will be analyzed in the Monitoring Report. This analysis will reveal whether benchmarks are being attained, exceeded, or not being met within the established timeframe. Periodic monitoring and use of benchmarks provides the opportunity to consider the need for new or revised strategies or implementation measures. Benchmarks may also be revised as necessary in response to periodic program evaluations.

MIP PERFORMANCE/QUALITY OF LIFE INDICATORS

Table ---- in Appendix B includes a set of performance indicators to monitor progress toward achieving the goals and objectives of the Maui Island Plan. The majority of indicators identified in this plan has been borrowed from existing plans and indicator reports and are based on available and reliable data to ensure their usefulness throughout the planning horizon. Local and national Level of Service (LOS) standards are used to develop performance indicators for infrastructure and public services-related policies.

GPAC RECOMMENDATION

The indicators are regional in nature to focus on the Island as whole rather than individual communities. Indicators will be analyzed in the Monitoring Report, and may be modified and updated as new technologies and data sources become available. Indicators are grouped by the following categories:

- **Heritage Resources**
- **Economic Development**
- **Housing**
- **Population**
- **Land Use**
- **Infrastructure and Public Facilities**



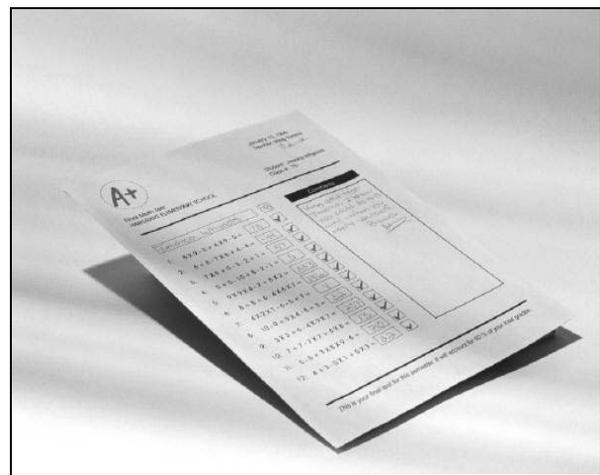
The mentioned indicators can also provide a snapshot of the quality of life on Maui. For monitoring purposes, additional columns should be added to Table ---. These include milestones broken out in five year intervals; milestones represent the desired intermediate states towards achieving the end state intended by the goals/objectives. Also, an additional column should be added to document the actual status at the end of each time interval. Comparing actual achievements with established milestones will help in determining whether community desires are being attained, exceeded, or not being met within the established timeframe.

MONITORING AND EVALUATION PROGRAM MANAGEMENT

The Monitoring and Evaluation Program is a comprehensive and dynamic tool designed to track plan implementation throughout the 2030 planning horizon. Active and ongoing management of the program is essential for ensuring its usefulness and success. The GPIG will assist the Department of Planning in managing and updating the Monitoring and Evaluation Program and initiating adjustments to the program as needed. The Department of Planning will coordinate with County agencies to develop appropriate implementation benchmarks for major proposed programs and initiatives.

MONITORING REPORT

Every five years the Department of Planning will complete a Monitoring Report which will evaluate the status of implementing Maui Island Plan goals/objectives based on the established MIP performance/quality of life indicators from Appendix B, Tables ----. The report will discuss the significance and findings of each indicator and will address emerging indicator trends to provide a snapshot of the quality of life on Maui. The report will serve as a “report card” for plan implementation and will identify successes, weaknesses, and strategies for improvement.



GPAC RECOMMENDATION

The report will be submitted to the Mayor and the County Council prior to annual budget submission; the intent is to allow for necessary budgetary adjustments to MIP programs and initiatives. The report will also be made available to the public.

Table : MIP Performance & Quality of Life Indicators

Performance Indicator	Significance	Data Source	Baseline ¹
HERITAGE RESOURCES			
OBJECTIVES	Insert Objectives		
Coastal water quality	The presence of contamination is an important measure of the health of Maui’s coastal waters and a quality of life indicator. The State Department of Health measures contaminants throughout the year and average values are reported annually.	HI, DOH, Clean Water Branch	
Shoreline postings due to sewage and other water pollution	Monitoring the frequency of shoreline postings due to water pollution is an indicator of coastal water quality which impacts both humans and aquatic species. The State Department of Health tracks the number of times shoreline waters are posted with water pollution warning signs by counties, military, private parties, or DOH.	HI, DOH, Clean Water Branch	0
Percentage of total streams on the impaired streams monitoring list	As a requirement of the federal Clean Water Act, the State Department of Health tracks stream health. DOH regularly compiles a report on streams which have contamination concentrations in excess of water quality standards. Stream health is a key indicator for monitoring the status of Maui’s natural environment.	HI, DOH, Environmental Planning Office, <i>List of Impaired waters in Hawaii prepared under Clean Water Act §303 (d)</i>	9%

¹ 2005 unless otherwise noted. Baseline data are only shown for those indicators with readily available information. A baseline study will need to be conducted to obtain baseline data for all indicators.

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Performance Indicator	Significance	Data Source	Baseline ¹
Watershed health	Pacific National Ecological Observatory Network (NEON) monitors watershed health by tracking watershed characteristics such as stream habitat quality and stream biotic diversity. Pollution levels in streams, aquifers, and coastal waters should be monitored. Monitoring the status of Maui's watersheds is an important tool for ensuring clean drinking water and a healthy environment.	University of Hawaii, Pacific NEON, DLNR	
Aquifer health	Aquifers are a vital source of water for Maui's residents. Monitoring aquifer health is important for maintaining water quality and the longevity of the aquifer. What is being measured? Chemical/fertilizer contamination? Salinity? Also important is monitoring sustainable yields and the management of water withdrawal from aquifers.	HI, DOH, Safe Drinking Water Branch	
Acres preserved by watershed partnerships	Watershed partnerships are voluntary alliances of public and private landowners committed to the common value of protecting large areas of forested watershed for water recharge and other values. Acreage preserved by watershed partnerships is an indicator of how well the community is caring for Maui's watersheds.	DLNR, DOFAW	
Acres of protected wilderness lands	Protected wilderness lands provide native species habitat, water quality protection, and the opportunity for recreation and cultural practice. These lands include State and Federal parks, nature preserves, forest reserves, and other protected lands.	DLNR, DOFAW?	
Threatened and endangered species count	The number of federally threatened and endangered species is an important indicator of the health of Maui's natural environment.	U.S. Fish and Wildlife Service	
Status of invasive species	Maui Invasive Species Committee (MISC) maintains a list of target invasive species that present the biggest risk on Maui. Monitoring the status of these species is a key indicator of the health of the natural environment.	MISC	

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Performance Indicator	Significance	Data Source	Baseline ¹
Health of indicator native species	Maui is home to an array of native and endemic species which are important to the island's economy, native Hawaiian population, and overall environmental health. Monitoring the health of key indicator native species (birds, fish, plants, and corals) is an important indicator for the health of all native species and their habitats.	DLNR, DOFAW	
Miles of designated Scenic Roadway Corridors	Maui is known for its spectacular scenic beauty. Designating Scenic Roadway Corridors contributes to the high quality of life on Maui.	County of Maui	
Air Quality Index	The U.S. Environmental Protection Agency (EPA) provides statistics on local air quality based on monitoring for specific pollutants. The Air Quality Index (AQI) is derived from multiple measurements taken throughout each year and provides an overall assessment of air quality. Air quality is an indicator of quality of life.	U.S. EPA, Air Quality Index Report	
Emissions of carbon dioxide and other greenhouse gasses	Emissions of carbon dioxide and other greenhouse gasses is a measure of Maui's contribution to global warming.		
Number of environmental education programs at elementary schools	Environmental education of youth is a vital step toward protecting Maui's natural environment. The number of environmental education programs at elementary schools is an indicator of Maui's dedication to environmental awareness and stewardship.	HI, DOE	
Enrollment in Hawaiian language immersion programs	Hawaiian language immersion programs provide students with an in-depth understanding of the Hawaiian language. The number of students in these programs is one measure of the preservation of native culture.	HI, DOE	
Number of students enrolled in Hawaiian language and culture classes	Enrollment in Hawaiian cultural classes focused on the language, history, and traditional practices is important for measuring exposure of school children to the Hawaiian culture.	HI, DOE	

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Percent of population that speaks the Hawaiian language	Measuring the percent of Maui's people who speak Hawaiian is an indicator of the vitality of the native culture.	U.S. Census? Randomized survey required?	
Attendance at museums and other cultural attractions	Museums and cultural attractions expose residents and visitors to Maui's many cultural groups. The number of attendees at these venues is one measure of the vibrancy of island culture.	County of Maui, County Data Book	816,093
Number of sites on the Historic Registry	The number of sites on the State and/or National Historic Registry is an indicator of how well Maui's historic resources are being preserved.	County of Maui, County Data Book	160
Tons and share of taro grown and sold	Taro is an important resource for and symbol of the Hawaiian culture. The level of taro production and tons sold are measures of how well traditional food sources and cultural practices are perpetuated.	HI, Department of Agriculture, HI Ag Statistics	

ECONOMIC DEVELOPMENT

OBJECTIVES

Insert Objectives

Unemployment rate	The unemployment rate is one measure of economic activity and the quality of life on Maui.	U.S. Department of Labor, Bureau of Labor Statistics	4.4%
Median family income	Median family income measures the economic prosperity of the community.	U.S. Census	
Poverty rate	Monitoring the percentage of individuals living at or below 200% of the Federal poverty level measures the pervasiveness of poverty on Maui.	U.S. Census	34%
Balanced job growth	Comparing the number of high, middle, and low wage earning jobs provides a measure of Maui's job balance. Maintaining a balance between earning levels is important for the long-term economic health of Maui.	U.S. Census	

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Percent of jobs that pay a livable wage for a family of two	Percent of jobs that pay a livable wage for a family of two is an indicator of the livability of Maui.		
Ratio of new jobs to new housing units	Having both adequate housing and employment options are vital components of a healthy community. The ratio of new jobs to new housing units is an important indicator of Maui’s livability and economic stability.		
Percent of jobholders with multiple low wage jobs	With an increasing cost of living, many Maui residents have taken on more than one job to make ends meet. An increasing number of residents with multiple low wage jobs indicates a decreasing quality of life for Maui residents.		
Educational attainment	Measuring the percentage of the population 25 years and over with a bachelor’s degree or more is important for understanding educational attainment on Maui. Educational opportunity assists in raising the standard of living by providing people with training for career advancement.	U.S. Census	22%
Public school student achievement	The percent of public school students meeting Department of Education standards in math and reading is one measure of how well Maui’s students are doing.	HI, DOE	Math: 14% Reading: 35%
High school graduation rate	Public high school graduation rates are one measure of how well Maui’s students are doing.	HI, DOE, School Status and Improvement Reports	
Percentage of ninth graders who graduate on time from the school they enrolled in as freshmen	Graduating high school on time is one indicator of how well Maui’s students are doing.	HI, DOE, School Status and Improvement Reports	
Percent of public school seniors accepted into higher education or training as of May	Post-graduation plans of public high school students are an indicator of how well Maui’s students are being prepared for the future.	Hi, DOE, Senior Exit Plan Survey	39%

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Value of agricultural production	Monitoring the value of agricultural production measures the industry’s contribution to Maui’s economy.	County of Maui, County Data Book	124 million (2004)
Value of diversified agricultural crops	Diversified agriculture is a growing industry which contributes to the economy and provides goods for the community.		
Employment within diversified agriculture	Employment in diversified agriculture is an important indicator of the health of Maui’s agricultural industry.		
Number of homeless people per 100,000 population	Number of homeless people per 100,000 population is an indicator of the pervasiveness of homelessness on Maui and an important measure of quality of life.	State Office for Homeless Programs, Housing and Community Development Corporation of Hawaii	1,412
Hotel occupancy rate	The visitor industry is a strong component of Maui’s economy. Hotel occupancy rate is an indicator of the health of the visitor industry.	County Data Book	79.6
Bankruptcies and foreclosures	Measuring the number of bankruptcies and foreclosures per year provides a gauge of economic health.		
Number of business start-ups per year	Number of business start-ups per year is an indicator of the business climate on Maui.		
Dollars spent in locally owned businesses	As national chain stores continue to come to Maui, more and more locally owned businesses are put out of business. Dollars spent in locally owned businesses is an indicator of the health of Maui’s local economy.		
Per capita expenditure on public education	Per capita expenditure on public education is one indicator of how well the public education system is faring in a community.	HI, DOE	

HOUSING

OBJECTIVES

Insert Objectives

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Housing Affordability Index	The Housing Affordability Index compares median home ownership costs to median income. This measure is an indicator of housing affordability which is a key component of assessing quality of life.	National Association of Realtors	
Share of new and existing units by structure	Having a diverse mix of housing types and prices is an important part of a health community. The mix of single family and multifamily housing units is an indicator of the types of housing choices available to Maui's residents.	County of Maui, Department of Planning	
Cost of living index	Cost of living is the cost of maintaining a certain standard of living over time. Cost of living is an important quality of life indicator.	U.S. Census?	
Number of long term residents moving off island	With an increasing cost of living, many local families are moving off island. Out-migration of long-term residents is one measure of how local families are fairing.		
Out of state homeownership rate	Out of state homeownership plays an important role in Maui's housing market. Measuring out of state homeownership can provide valuable information regarding Maui's housing climate.		

POPULATION**OBJECTIVES****Insert Objectives**

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Percent in-migration per year	Maui is a very desirable place to live and therefore attracts new residents every year. In-migration per year is an important quality of life indicator.		
Number of long term residents moving off island	With an increasing cost of living, many local families are moving off island. Out-migration of long-term residents is one measure of how local families are fairing.		
Involvement in Hawaiian cultural activities	Measuring the involvement in Hawaiian cultural practices, such as hula, canoeing, and ukulele, is an important indicator of the pervasiveness of the native culture.	Randomized survey required	

LAND USE

OBJECTIVES

Insert Objectives

Percentage of land classified as urban, rural, agricultural, and conservation	Measuring the change over time of lands classified as urban, rural, agricultural, and conservation reveals informative trends regarding land use on Maui.	County of Maui, County Data Book	U: 4% R/A: 55% C: 41%
Comparison of new building permits issued within and outside of Urban Growth Boundaries	Urban Growth Boundaries are a tool for directing growth. Comparing new building permits within and outside of these boundaries is a measure of how well the County is achieving the goal of directing growth to areas appropriate for urban development.	County of Maui, Department of Planning	
Comparison of new building permits issued within and outside Urban Service Areas	Urban Service Areas are a tool for directing growth to areas where urban services will be provided by the County. Comparing new building permits within and outside of these boundaries is a measure of how well the County is achieving the goal of directing growth to areas where urban services will be provided.	County of Maui, Department of Planning	

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Percent of new housing units built within urban infill/redevelopment areas	Utilizing infill development is a key policy of the Maui Island Plan. Infill development focuses growth in already urbanized areas and creatively utilizes vacant or underdeveloped property to accommodate a range of local needs in a sustainable manner. The percent of new housing units built within urban infill/redevelopment areas is an important indicator of land use trends on Maui and the success of plan implementation.	County of Maui, Department of Planning	
MIP amendments to UGB	Amendments to the UGB may be needed as Maui’s population grows over time. The number and size of General Plan amendments to the UGB is an indicator of the adequacy and success of the established boundary.	County of Maui, Department of Planning	
MIP proposed Zoning Code revisions adopted	Numerous revisions to the County Zoning Code are proposed in the Maui Island Plan. Tracking the implementation of these changes is important for monitoring plan implementation.	County of Maui, Department of Planning	
Percent of new residential lots within a quarter mile of services	Locating homes and services proximate to each other is an important land use policy of the Maui Island Plan. Percent of new residential lots within a quarter mile of services is an indicator of the livability of Maui’s urban areas.	County of Maui, Department of Planning	
Average travel time to work	Average commute time to work is an indicator of traffic congestion and how far residents live from work. Tracking this indicator over time will reveal travel trends.	U.S. Census	
Percentage of developed shoreline miles	A key policy of the Maui Island Plan is to discourage development of the shoreline because of its environmental, economic, and social importance. Percentage of developed shoreline miles is an indicator of how well the County is enforcing this policy.	University of Hawaii, Sea Grant College Program? Study required?	

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Number of shoreline miles in preservation easements	The number of shoreline miles preserved through the TDR/PDR program is an indicator of how well the County is directing development away from the shoreline and protecting this important natural resource.	County of Maui, Department of Planning	
Number of agricultural acres in preservation easements	The number of agricultural acres preserved through the TDR/PDR program is an indicator of how well the County is protecting agricultural lands for agricultural use and directing urban development to more appropriate areas.	County of Maui, Department of Planning	

INFRASTRUCTURE & PUBLIC FACILITIES

OBJECTIVES		Insert Objectives	
Percent of waste that is recycled	Recycling waste conserves on landfill space and raw materials. Tracking the percent of waste that is recycled will let the County know if its waste diversion goals are being met.	County of Maui Division of Solid Waste	
Reclaimed water use	Using reclaimed water is important for conserving fresh water resources. Reclaimed water use is an indicator of how efficiently Maui is utilizing its water resources.	County of Maui, Department of Water Supply and Division of Wastewater	
Use of low-flow water fixtures	Using low-flow water fixtures is an effective and inexpensive way to conserve fresh water resources. The prevalence of low-flow water fixtures in Maui’s homes and business is an indicator of how well fresh water resources are being conserved.	Randomized Survey Required	
Commute mode shares	Tracking commute mode shares (single occupancy vehicles, carpools, transit, walking, biking, etc.) provides information on a community’s travel preferences and trends.	U.S. Census	Commute mode shares

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Availability of public transit	The community’s perception of the convenience of public transit is a key component of the success of public transit on Maui.	Randomized survey required	Availability of public transit
Annual Transit Ridership	Adequate public transit is an integral part of a functioning urban environment. Annual transit ridership is an indicator of the success of public transit on Maui.	County of Maui, Department of Transportation	
Ratio of bike paths to streets	Providing adequate bike paths is essential to promoting biking as a viable alternative form of transportation. The ratio of bike paths to streets is an indicator of County infrastructure dedicated to this alternative mode of transportation.	HI, Department of Transportation, Highways Division County of Maui, Department of Transportation	
Peak hour level of service for key auto corridors and key transit corridors	Peak hour level of service for key auto corridors and key transit corridors is an indicator of the status of auto and transit mobility on Maui. Tracking level of service in these corridors provides information on needed improvement to roadway and transit infrastructure.	HI, Department of Transportation, Highways Division County of Maui, Department of Transportation	
Percent of energy used by source	Percentage of energy used by source (petrol, coal, and alternative energy) is one indicator of how well Maui is diversifying its energy sources.	HI, DBEDT, Energy Branch	Petrol: 81% Coal: 3% Alt Energy: 16%
Private alternative energy use	The use of alternative energy technologies such as solar, photovoltaic, biodiesel, and hybrid cars is an important indicator of Maui’s conservation ethic.	Randomized Survey Required	
Number of police personnel per 1,000 population	The number of police personnel per 1,000 population is an indicator of the safety of the community and the adequacy of the County police force. The LOS standard for police is 2 police personnel per 1,000 population.	County of Maui, Department of Police	
Rate of reported crimes per 100,000 population	The rate of reported crimes (property and violent) per 100,000 population is one indicator of the safety and quality of life of the community.	HI Attorney General, Uniform Crime Reporting Program Data	Property: 5,797 Violent: 229

GPAC RECOMMENDATION

Performance Indicator	Significance	Data Source	Baseline ¹
Number of fire personnel per 1,000 population	The number of fire personnel per 1,000 population is an indicator of the safety of the community and the adequacy of the County fire control force. The LOS standard for fire control is 1.65 fire personnel per 1,000 population.	County of Maui, Department of Fire Control	
Average fire response time	Average fire response time measures the responsiveness of the County Department of Fire Control and is an indicator of the safety of the community.	County of Maui, Department of Fire Control	
Number of schools operating over capacity	School crowding can negatively affect student performance. Number of public schools operating over capacity is an indicator of the adequacy of public school facilities.	HI, DOE	Number of schools operating over capacity
Library square footage per 1,000 population	Library facilities are an important part of a healthy community. Library square footage per 1,000 population is an indicator of the library system’s ability to meet the community’s needs. The LOS standard for library facilities is 600 gsf per 1,000 population.	HI, DOE	
COMMUNITY HEALTH AND WELLBEING			
Leisure time per month	Leisure time is the time when a person is free of responsibilities and is able to relax or choose enjoyable activities to engage in. Having adequate leisure time is a key component of living a healthy life.	Randomized survey required	
Life expectancy	Average life expectancy is one indicator of a community’s overall health.	U.S. Census	

GPAC RECOMMENDATION

Percentage of students (grades 6-12) reporting access to positive community activities

Access to positive community activities, such as Boys and Girls Clubs, 4-H clubs, organized sports, and music, dance, or other performance arts groups, is one indicator of how well Maui’s youth are being provided for.

HI, DOH, Alcohol and Drug Abuse Division, *Ka leo o na keike. The 2003 Hawaii student alcohol, tobacco, and other drug use study*

60%

Performance Indicator	Significance	Data Source	Baseline ¹
Percentage of students (grades 6-12) who report living in disorderly communities	A high prevalence of crime, drug selling, fights, abandoned buildings, and graffiti with in a community are indicators of the health of the community.	HI, DOH, Alcohol and Drug Abuse Division, <i>Ka leo o na keike. The 2003 Hawaii student alcohol, tobacco, and other drug use study</i>	46%
Rate of drug-related arrests per 100,000 population	The prevalence of drug and alcohol abuse is one measure of a community’s health. The State provides statistics on drug and alcohol related crimes each year for both adults and youth.	HI Attorney General, Uniform Crime Report Data	549
Days of sunshine per year	Sunshine can play an important role in a person’s overall mood, productivity, and outlook on life. Although it is not a factor that can be manipulated, number of days of sunshine per year provides a measure of the livability of a region.	NOAA	