Mineral Extraction Policy Plan

Jefferson County, Colorado Planning and Zoning

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A. Introduction

1.Intent of Plan

This Plan provides a series of County goals and related policy guidelines for the extraction of commercial sand gravel, and quarry aggregate in unincorporated areas of the County. The use of these policies to guide the locating of mining activity and the on-site procedures utilized during extraction will assure the greatest attainment of the stated goals.

The policies will serve as a reference in the review of zoning cases and will provide a framework for the eventual updating of County regulations and procedural guides related to mining activity.

This Plan has been primarily developed in response to C.R.S. 1973, 34-1 304 et. seq., (hereinafter referred to as House Bill 1529), which calls for a master plan for extraction of "'commercial mineral deposits". Such deposits are defined there as those; a) consisting of limestone used for construction purposes, coal, sand, gravel, or quarry aggregate whose extraction is commercially feasible, and b) which have significant economic or strategic value to the area, state, or nation as demonstrated by geologic, mineralogic, or other scientific data.

The extraction of limestone and coal have not been addressed in this Plan because mining of these materials in Jefferson County has been minimal in the past few years. Also, there are studies pending that will add needed data to address these issues and amend the Plan in the future. The County also contains clay, metallic minerals, mineral fuels,

etc., which are not included. These items will also be included at a later date as information becomes available.

Since this Plan must be coordinated with other land use plans for the County, it was also developed to respond to the following statutes which affect land use planning:

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C.R.S. 1973, 30-28-106 (as amended)
C.R.S. 1973, 30-28-107 (as amended)
C.R.S. 1973, 29-20-102 (as amended)
C.R.S. 1973, 29-20-104 (as amended)
C.R.S. 1973, 24-65.1-201 (as amended)
C.R.S. 1973, 24-65.1-203 (as amended)
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2. Master Plan Requirements of House Bill 1529

According to the statute, the Plan should take into consideration the following items:

- a. A map (with text) of the sand, gravel, and quarry aggregate resources of Jefferson County prepared by the Colorado Geological Survey.
- b. The potential for effective multiple sequential land use on the mining site which would result in the optimum benefit to the landowner, neighboring residents, and the community as a whole.
- c. The development or preservation of land to enhance physically attractive surroundings compatible with the surrounding area.
- d. The quality of life of the residents in and around the areas which contain mineral deposits.
- e. Other land use plans of Jefferson County.
- f. Maximization of the extraction of commercial mineral deposits.
- g. The ability to reclaim an area after mining.

3. Approach Taken in this Plan

The view taken here is that the planning requirements listed in House Bill 1529 reflect the basic conflict between mining activity and other land uses. Jefferson County has played an important local and regional role in the supply of mineral resources and will continue to do so in the future. Over the past ten years, Jefferson County has supplied 50% of the resources produced in the region.

The process of extraction can have negative effects on surrounding land and the quality of life of the residents. These negative effects vary from site to site and have reactions upon the population in varying ways depending upon individual concerns.

Therefore, the Plan has two aims. The first aim is to provide policies which define the conflict in more specific terms and to identify what the County considers beneficial to the community. These conditions are defined for both during mining activities, and rehabilitating the land to a form and productivity that is beneficial to the community after mining. The second aim of the Plan is to provide policies which aid in the resolution of conflicts, by encouraging mining in areas where there are minimal differences and by defining site procedures through which conflicts can be minimized when they occur. These policies are intended as guidelines to be used as a starting point in evaluation of land for mineral extraction.

To develop such policies the County is taking a new approach to planning. In the past, planning in the County has meant the development of land use maps without explanation as to criteria for stating why various lands are allocated to their designated uses. The Plan focuses on the

establishment of criteria to be used as guidelines for case review and enforcement.

The Plan is intended to be a flexible document which will undergo updating and revision from time to time. This is particularly true with regards to Policy 17 which establishes goal priorities on the basis of relative concern for issues which will change in the future.

This Plan addresses itself to seventeen specific issue areas which are based on general guidelines of House Bill 1529, and which provide a specific focus for the development of goals and policies. There are two types of policies which have been developed as means for attaining the various goals, one type is site suitability policies, the other is site development policies.

a. Site Suitability Policies

These provide guidelines for defining areas of the County where mining should be located to maximize achievement of County goals. These are areas which contain better quality resources and provide fewer negative side effects.

The order in which the issue-goals are included in the Plan is not intended to reflect their relative importance. The policies for each issue-goal have been written as statements regarding the one goal without concern for conflict with other goals. This problem of conflict between goals is dealt with in Policy 17 which includes priority ratings for the Various goals.

This policy establishes a point system for evaluating sites according to their ability to accommodate mining in conformance with the County goals. According to the

summed characteristics of a site, a total point score can be assigned which ranks the site between "0" and "100". A score of "100" indicates that the site is in total conformance with the attainment of County goals. Scores of less than "100" indicate some potential conflict with one or more goals.

The rating attached to any specific site is not intended to be used as a final criterion in the approval of mining cases. There are no cut off limits requiring conformance. All sites will be considered for mining regardless of scores dictated by current site characteristics. Rather, it provides a reference point for case review. Planning Staff can discuss the ranking with extractors, and in the case of Planned Unit Development proposals, point out site procedures which could mitigate goal conflict on the site. Thus, the rating could be improved by demonstration on the part of the extractor that due to site procedures the proposed mining activity is in greater conformance with the County goals than might typically be suspected given the site's possessive characteristics.

This point total of sites utilized for mining also provides a guide indicating how well suited a site is compared to other sites in the County. Mining is a regional issue and the point total of sites being allocated to mining activity provides a regional measure of goal attainment. The more sites with higher suitability ratings which are utilized for mining, the greater assurance the County has that its goals are being attained throughout the County.

Planning Department studies indicate that the County has a sufficient number of highly suited sites to meet demand for resources through the year 2000 while conforming to other County goals. However, there is always the possibility that demand may increase over projections.

b. Site Development Policies

These policies serve two purposes. First, they describe the procedures which can lead the County towards its goals on all sites. Second, they provide the means for increasing suitability ratings as described above. In fact, in some cases the appropriate site development procedures can move the County closer to its goals than if no mining were to occur at all.

During application of County policies to cases, the County will consider competitive market forces in the mining industry. The County will work with the extractors towards developing site development procedures which meet County policies and do not place unfair constraints on the extractor. However, the County will reserve the right to deny cases or insist upon any site development procedures required to insure conformance with policies. Specific policy interpretation during the case process will depend greatly on the specific site conditions when wording of a policy is qualifying in nature. (This, again, emphasizes the "guideline" nature of the policies rather than construing them to be regulatory in nature.)

4. Use of Data in this Plan

a. The Mineral Quality Map

The map called for by House Bill 1529 is enclosed on page 30 with a summary of its classifications and the location of available resources.

The map is based on a measure called "mineral quality", which is defined by processing characteristics of the

resources, multiplicity of potential use of the resources, and current demands for the resources. This is in contrast to a map based on commercial value which would have to include many changing unknown market factors. The County feels that this general measure is an appropriate response to House Bill 1529 in that what is "commercially feasible" and "economically significant" is highly situational depending on individual extractors unique market channels.

This map, like other data in support of this Plan, is intended to serve as a general guide to the County. Extractors will maintain the option of demonstrating higher quality on their site than that indicated on the map by demonstrating commercial feasibility and economic significance as defined in House Bill 1529.

The resources shown on that map, practically speaking, constitute two basic categories: 1) sand and gravel, and 2) quarry aggregate. Available, better quality aggregate is becoming scarce in the plains and will tend to come from the mountains in greater abundance in the future. In contrast, the better quality sand and gravel is located in the plains.

b. Other Data Associated with the Plan

To aid the implementation of policy use, the Planning Department has developed a body of technical information which exists in map form and which can be referenced by those who use the policies. There are basically two types of maps produced: "attribute maps" and "suitability maps". (Maps and related descriptive documentation are available in the county Planning Department.)

Attribute Maps are developed for various issue-goal statements. The various environmental characteristics

described in the related policies are also described on the maps. Suitability maps are developed by combining all of the attribute maps into a single map which indicates how well suited various areas are for mining. The criteria by which the suitability maps are created are those established in Policy 17 of the Plan utilizing the point scheme mentioned earlier.

It should be pointed out that in any mining case there may be need for information not provided in the existing attribute and suitability maps. This can occur for one of two reasons; either the case has some aspect not generally considered, or there are some concerns which the Planning Department has been unable to map due to the nature of the information or the lack of data. Thus, use of the maps must remain flexible, and new maps should be created whenever sufficient new data becomes available. (It should be noted that the current suitability maps do not reflect criteria related to transportation policies for this reason.)

5. Summary Statement

The policies are used to guide the land use decision making process and will be considered at all applicable levels of land use decision making (i.e. Board of County Commissioners, Planning Commission, Board of Adjustment) in Jefferson County.

B. Goals And Policies

GOAL 1: Minimize adverse <u>visual impacts*</u> due to mining.

Site Suitability* Policy

Policy 1.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to visual impact:

Low Visual Impact High Suitability
Moderate Visual Impact Moderate Suitability
High Visual Impact Low Suitability

Site Development Policies

Policy 1.2

The location and design of the excavated portion of the mine site should be sensitive to existing and surrounding topographic form.

Policy 1.3

The area of disturbance due to the mining activity should be kept to the minimum.

Policy 1.4

Excavation in <u>visually sensitive</u>* areas such as ridges, hilltops, and scenic areas should be minimized.

Policy 1.5

Locating structures, machinery and equipment storage and repair areas, utility lines, access roads and driveways, fences, gates, signs, and mined material stockpiles in visually sensitive areas such as ridges, hilltops, and scenic areas should be avoided.

Policy 1.6

The location and design of structures, machinery and equipment storage and repair areas, utility lines, access roads and driveways, fences, gates, signs, and mined-material stockpiles should be sensitive to the natural color, form, and <u>texture*</u> of the surrounding area.

Policy 1.7

The excavated portion of the mine site, structures, machinery and equipment storage and repair areas, utility lines, access roads and driveways, and mined-material stockpiles should be screened* from view or camouflaged by methods to include, but not to be limited to, the following:

- a. existing and/or replanted vegetationb. existing landforms and/or artificially created landforms
- Policy 1.8

The glare from welding and night lighting of the mine site should not intrude on the privacy of neighboring residences.

GOAL 2: Minimize air pollution.

Site Development Policies

Policy 2.1

Operators should conform to all current State and Federal regulations and standards concerning fugitive dust. Should Jefferson County adopt standards concerning fugitive dust,

such new County standards would take precedence over the State standards.

Policy 2.2

Fugitive dust abatement and preventive measures for unpaved roads and unpaved parking areas may include but should not be limited to:

- a. frequent watering
- b. addition of dust palliatives to the water
- c. detouring
- d. paving
- e. speed control
- f. surface treatment with dust prevention chemicals
- q. other methods of equal or greater effectiveness in reducing the air pollution produced

Policy 2.3

Fugitive dust abatement and preventive measures for explosive detonation activities, earth and construction material moving, mining and excavation activities may include but should not be limited to:

- a. wetting down, including pre-watering
- b. landscaping and replanting with vegetation
- c. covering, shielding or enclosing the area
- d. treating, the use of dust palliatives and chemical stabilization
- e. preventing the deposit of dust and mud on improved streets and roads
- f. disturbing less topsoil and reclaiming as soon as possible

- g. sequential blasting should be employed whenever or wherever possible to reduce the amount of unconfined particulate matter entering the air
- h. such dust control strategies as revegetation, delay of surface opening until demanded, or surface compaction and sealing should be applied
- i. haulage equipment should be washed or wetted down, treated, or covered when necessary to minimize the amount of dust emitted in transit and in loading
- j. the above measures should also be applied during periods when actual mining activity is not being conducted, such as on weekends and holidays

GOAL 3: Minimize noise pollution.

Site Development Policies

Policy 3.1

Mining operations should be conducted in a manner so that any noise produced is not objectionable due to intensity, intermittence, beat and rhythm, frequency or shrillness.

Policy 3.2

Operators should conform to all current State and Federal regulations and standards concerning noise levels. Should Jefferson County adopt standards concerning noise levels, such new County standards would take precedence over the State standards.

Policy 3.3

Mining operations should utilize natural or replanted vegetation and natural or artificial landforms whenever or

wherever possible to buffer noise emanating from the mining activity.

GOAL 4: Minimize water pollution.

Site Development Policies

Policy 4.1

Mining operations should not degrade the existing surface and/or ground water quality by:

- a. introducing substances which in concentration or combination are toxic to human, animal, or plant life b. introducing suspended solids, colloids, combinations of solids with other suspended substances, floating debris, scum and other floating materials in amounts sufficient to be unsightly or deleterious
- c. introducing material that will settle to form objectionable sludge deposits
- d. introducing bacteria, fecal coliform, fungi, viruses and other biological constituents
- e. introducing phosphates, nitrates and other dissolved nutrients
- f. introducing materials which produce taste, color, odor, turbidity or other conditions in such a degree as to create a nuisance
- g. appreciably increasing or decreasing the acidity or temperature
- h. appreciably increasing salinity
- i. introducing trash, refuse, oil, and grease residues or other foreign materials

Policy 4.2

Water used in mining and processing of sand, gravel, and quarry aggregate should be recycled whenever and wherever possible to prevent pollution of off-site water supplies.

GOAL 5: Minimize the adverse impact of mining operations on surface and ground water and promote water conservation.

Site Development Policies

Policy 5.1

Mineral extraction requests should be accompanied by proof that the applicant has sufficient water rights to carry out the operation.

Policy 5.2

Mining operations should minimize the <u>consumptive*</u> use of water.

Policy 5.3

Mining operations should not appreciably increase or decrease the flow of water in drainages.

Policy 5.4

Mining operations should not detrimentally increase or decrease the level of the ground water table due to the mining activity.

Policy 5.5

Water used in mining and processing of sand, gravel, and quarry aggregate should be recycled whenever and wherever possible to conserve water supplies.

GOAL 6: Minimize adverse impacts on vegetation.

Site Suitability Policy

Policy 6.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to vegetation:

No Known Unique Vegetation High Suitability
Unique Vegetation Ecosystems Low Suitability

Site Development Policies

Policy 6.2

Mining operations should destroy the least practicable amount of the existing vegetation.

Policy 6.3

Existing topsoil should be preserved for later use in the <u>inprogress*</u> and <u>final reclamation*</u> efforts.

GOAL 7: Minimize adverse impacts on wildlife.

Site Suitability Policy

Policy 7.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to wildlife:

Poor Habitat Conditions

Fair to Good Habitat Conditions

Excellent Habitat Conditions

Habitat Conditions

High Suitability

Moderate Suitability

Low Suitability

Low Suitability

Site Development Policy

Policy 7.2

Mining operations should destroy the least practicable amount of wildlife habitat.

GOAL 8: Preserve and protect archaeologic sites*.

Site Suitability Policy

Policy 8.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to archaeologic sites:

Contains No Archaeologic Sites High Suitability
Contains Archaeologic Sites Low Suitability

Site Development Policy

Policy 8.2

Archaeologic sites encountered during a mining operation should be preserved or salvaged.

GOAL 9: Preserve and protect <u>historic sites*</u>.

Site Suitability Policy

Policy 9.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to historic sites:

Contains No Historic Sites
Contains Former Railroad Routes
Contains Historic Traiways
Contains Historic Structures
Contains Historic District

High Suitability
Moderate Suitability
Moderate Suitability
Low Suitability
Low Suitability

Site Development Policy

Policy 9.2

Historic sites encountered during a mining operation should be preserved or salvaged.

GOAL 10: Preserve and protect <u>significant geologic</u> <u>sites*</u>.

Site Suitability Policy

Policy 10.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to significant geologic sites:

Contains No Significant Geologic Sites	High Suitability
Contains Significant Geologic Sites	
a. Culturally Significant Landforms	Low Suitability
b. Dinosaur Fossils	Low Suitability
c. Unusual Mineral Accumulations	Low Suitability

Site Development Policy

Policy 10.2

Significant geologic sites that are encountered during a mining operation should be preserved.

GOAL 11: Insure site safety during mining.

Site Suitability Policy

Policy 11.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to hazardous geologic conditions:

No Hazards	High Suitability
100 Year Floodplain	High Suitability
Undermined Areas	Low Suitability
Potentially Unstable Slopes in Mountain Area	Low Suitability
Landslide Areas in the Plains	Low Suitability
Geologic Hazard Overlay Zone District	Low Suitability

Site Development Policies

Policy 11.2

Mining operations should use warning signs, fences, guards, lighting or other means to warn and protect people from mine site hazards such as steep slopes, holes, ponds, and

heavy equipment. All applicable Federal and State occupational safety and health laws should be conformed with.

Policy 11.3

Junk, refuse, trash, etc. should be disposed of properly.

Policy 11.4

Mine sites should have emergency ingress and egress.

Policy 11.5

Hours of operation of mine site should be established to insure compatibility with the surrounding area.

Policy 11.6

Mining operations should be at least 25 feet from adjacent property lines and at least 250 feet from occupied dwellings.

Policy 11.7

Mining operations should not accelerate or decelerate geologic processes such as erosion, sedimentation, and gravitational movement of earth and/or rock material to the point that such processes become a hazard to life or property.

Policy 11.8

Mining operations located within the boundaries of 100 year floodplain should be carried out in ways such that any flood conditions would not be aggravated by the mining activity.

Such methods could include but should not necessarily be limited to:

- a. not constructing permanent structures in the floodplain
- b. not blocking or obstructing the steam channel
- c. avoiding the storage of machinery and equipment in the floodplain

Policy 11.9

Operators should abate on-site and off-site geologic hazards that might be aggravated by the mining operation, to the greatest extent possible.

GOAL 12: Minimize adverse impacts due to blasting.

Site Development Policies

Policy 12.1

Operators should conform to all current State and Federal regulations and standards regarding blasting. Should Jefferson County adopt standards concerning ground motion due to blasting, such new County standards would take precedence over the above referenced standards.

Policy 12.2

People occupying buildings in the vicinity of the mining operation should be notified of when blasting will occur.

Policy 12.3

Noise due to blasting should conform to the policies put forth under Goal 3.

GOAL 13: Minimize adverse impacts due to truck traffic.

Site Suitability Policy

Policy 13.1

To the greatest extent possible, mining operations should be located in areas where the surrounding road network can accommodate heavy trucks and where the surrounding road network is not exceeding carrying capacity.

Site Development Policies

Policy 13.2

Ta the greatest extent possible, mining operations should use roads designed to accommodate legal truck loads.

Policy 13. 3

To the greatest extent possible mining truck traffic should use roads which do not currently exceed carrying capacity and should use roads at times of day when interference with pedestrian and other vehicular traffic would be minimal.

Policy 13.4

To the greatest extent possible, mining operators should load trucks in such a manner that material will not fall off during haulage.

GOAL 14: Return the land to a form and productivity that is beneficial to the community.

Site Suitability Policy

Policy 14.1

Due to the importance of reclaiming a mineral extraction site to a productive and viable long-term <u>after use*</u>, as well as the need to adequately fulfill in-progress reclamation programs, the feasibility for the re-establishment of a viable vegetation community should be considered in the determination for mineral extraction. The suitability of an area for extraction should conform to the following guidelines with respect to the feasibility of reclamation:

High Feasibility
Moderate Feasibility
Low Feasibility
Extremely Low Feasibility
High Suitability
Moderate Suitability
Low Suitability
Low Suitability

Site Development Policies

In-Progress Reclamation

Policy 14.2

Areas of disturbance due to mining activities should be kept to the minimum.

Policy 14.3

As soon as possible after the mining operation commences operators should stabilize and reclaim the affected land using natural and replanted vegetation and natural and artificial topography. This in-progress reclamation should be scheduled to coincide with the site development schedule.

Policy 14.4

The in-progress reclamation effort should utilize existing topsoil and/or other topsoil materials consistent with the replanting program.

Policy 14.5

The in-progress reclamation effort should utilize indigenous and/or other types of vegetation consistent with the replanting program and any after use plans.

Policy 14.6

Mining operations which temporarily cease activity for a period of one year or more should carry out an interim reclamation program compatible with future continuation of the operation.

Policy 14.7

In-progress reclamation should be compatible with the final reclamation plans and any proposed after uses for the site.

Final Reclamation

Policy 14.8

Final reclamation will commence no more than six months after the mining ceases and will be completed no more than two years after the mining ceases.

Policy 14.9

The final reclamation of the mine site should return the land to a form and productivity that is in conformance with the established land use plan for the area and that will be toward a balanced ecological state that does not substantially contribute to environmental deterioration. To this end natural and replanted vegetation and natural and artificial topography should be used.

Policy 14.10

The final reclamation effort should utilize existing topsoil and/or other topsoil materials consistent with the replanting program.

Policy 14.11

The final reclamation effort should utilize indigenous and/or other types of vegetation consistent with the replanting program and any after-use plans.

Policy 14.12

The abandoned mine site should be safe. To this end, some method of fencing, warning signs, barricades or other means should be used to warn and protect people from hazardous conditions.

Policy 14.13

The operator will maintain the abandoned mine site until it has been stabilized and until replanted vegetation takes hold.

After Use

Policy 14.14

Any proposed after use of the mine site should be in conformance with the established future land use policy plan and should be beneficial and complementary to the surrounding neighborhood.

GOAL 15: Preserve and protect the economy of Jefferson County and the Denver Metropolitan region.

Site Suitability Policies

Policy 15.1

The suitability of an area for mineral extraction should conform to the following guidelines with respect to mineral resource quality (see Mineral Quality map and accompanying explanation in Section C of Plan):

Very Poor Quality
Poor Quality
Low Suitability
Low Suitability
Moderate Quality
Moderate Suitability
Good Quality
High Suitability

Policy 15.2

Due to the relative cost of site development policy conformance to the operator and the relative cost of site development policy enforcement to the County, the suitability of an area for mineral extraction should conform to the following guidelines with respect to the land use category of the area in and around the proposed mining site:

Residential Low Suitability
Platted Subdivision Low Suitability
Public Uses Low Suitability

Commercial/Industrial Moderate Suitability
Agricultural Moderate Suitability
Recreation Moderate Suitability
Other Lands High Suitability

Site Suitability Policies For Non-Mining Uses

Policy 15.3

The suitability of an area for non-mining uses that would permanently preclude the extraction of mineral resources should conform to the following guidelines with respect to mineral resource quality (see Mineral Extraction <u>map</u> and accompanying explanation in <u>Section C</u> of the Plan):

Very Poor Quality High Suitability
Poor Quality High Suitability
Moderate Quality Moderate Suitability
Good Quality Low Suitability

Policy 15.4

Development of non-mining land uses on land surrounding mineral resource areas should conform to the following suitability guidelines with respect to the quality of the resource in the mineral resource area:

Very Poor Quality High Suitability
Poor QualityHigh Suitability

Moderate Quality Moderate Suitability

Good Quality Low Suitability

Site Development Policies

Policy 15.5

Mining operations should extract the greatest practicable amount of mineral resource located within the limits of the mine site.

Policy 15.6

Mining operations should be carried out in ways that would not diminish the taxable value of the mine site or surrounding land and that would not diminish the property values of surrounding lands.

Policy 15.7

During application of County policies to cases, the County shall consider competitive market forces in the mining industry. The County shall work with the extractors towards developing site development procedures which meet County policies and do not place unfair constraints on the extractor. However, the County shall reserve the right to deny cases or insist upon any site development procedures required to insure conformance with policies.

GOAL 16: Provide fair and equal treatment for all mineral extraction activities.

Policy 16.1

The County should apply the Mineral Extraction Policy Plan uniformly to all mineral extraction activities.

Policy 16.2

The County should establish procedures to insure quick processing of mineral extraction requests and yet be consistent with the interests of Policy Plan conformance.

GOAL 17: Locate mining activity in areas that are suitable as defined by County established priorities on the site suitability policies.

Policy 17.1

The overall suitability of an area for mineral extraction should be determined by using the following numerical points established for each characteristic listed in the site suitability policies. The higher the number, the more desirable the characteristic is in determining overall suitability for mineral extraction.

(The point scheme listed here is meant as a policy guideline and does not imply specific cut off levels for approval or denial of mineral extraction cases.)

Site Suitability Policies		Numerical Poin
(Policy 1.1)		
The suitability of an area for m following guidelines with respe		
Low Visual Impact	High Suitability	15
Moderate Visual Impact	Moderate Suitability	8
High Visual Impact	Low Suitability	0
(Policy 6.1)		
The suitability of an area for m following guidelines with respe		nould conform to the
No Known Unique Vegetation	High Suitability	5
Unique Vegetation Ecosystems	Low Suitability	0
(Policy 7.1)		
The suitability of an area for m following guidelines with respe		nould conform to the
Poor Habitat Conditions	High Suitability	6
Fair to Good Habitat Conditions	Moderate Suitability	3
Excellent Habitat Conditions	Low Suitability	0
Habitat Can Support Endangered Species	Low Suitability	0
(Policy 8.1)		
The suitability of an area for m following guidelines with respe		
Contains No Archaeologic Sites	High Suitability	3
Contains Archaeologic Sites	Low Suitability	0
(Policy 9.1)		
The suitability of an area for m following guidelines with respe		
Contains No Historic Sites	High Suitability	5
Contains Former Railroad Routes	Moderate Suitability	2
Contains Historic Trailways	Moderate Suitability	2
Contains Historic Structures	Low Suitability	0

(Policy 10.1)

The suitability of an area for mineral extraction should conform to the following guidelines with respect to significant geologic sites:

Contains No Significant Geologic Sites	High Suitability	7
Contains Significant Geologic Sites		
a. Culturally Significant Landforms	Low Suitability	0
b. Dinosaur Fossils	Low Suitability	0
c. Unusual Mineral Accumulations	Low Suitability	0

(Policy 11.1)

The suitability of an area for mineral extraction should conform to the following guidelines with respect to hazardous geologic conditions:

No Hazards	High Suitability	15
100 Year Floodplain	High Suitability	15
Undermined Areas	Low Suitability	0
Potentially Unstable Slopes in Mountain Area	Low Suitability	0
Landslide Areas in the Plains	Low Suitability	0
Geologic Hazard overlay Zone District	Low Suitability	0

(Policy 14.1)

Due to the importance of reclaiming a mineral extraction site to a productive and viable long-term after use, as well as the need to adequately fulfill in-progress reclamation programs, the feasibility for the re-establishment of a Viable vegetation community should be considered in the determination for mineral extraction. The suitability of an area for extraction should conform to the following guidelines with respect to the feasibility of reclamation:

High Feasibility	High Suitability	11
Moderate Feasibility	Moderate Suitability	6
Low Feasibility	Low Suitability	4
Extremely Low Feasibility	Low Suitability	0

(Policy 15.1)		
The suitability of an area for following guidelines with re		
Good Quality	High Suitability	15
Moderate Quality	Moderate Suitability	13
Poor Quality	Low Suitability	8
Very Poor Quality	Low Suitability	0
(Policy 15.2)		
Due to the relative cost of operator and the relative co the County, the suitability of conform to the following gu of the area in and around the	ost of site development of an area for mineral e uidelines with respect to	t policy enforcement to extraction should the land use category
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(NOTE:The rationale and implications of this point system are discussed in the Documentation which accompanies this plan.)

C. Map Showing the Quality of Sand Gravel and Quarry Aggregate Resources in Jefferson County, and Map Explanation

The **following map** is not a land use plan. It is a data source showing the relative quality and geographic distribution of sand, gravel and quarry aggregate resources in Jefferson County.

It is based on information included in the Colorado Geologic Survey's study of sand, gravel and quarry aggregate resources as mandated by House Bill 1529, and data on the bedrock geology in the County.

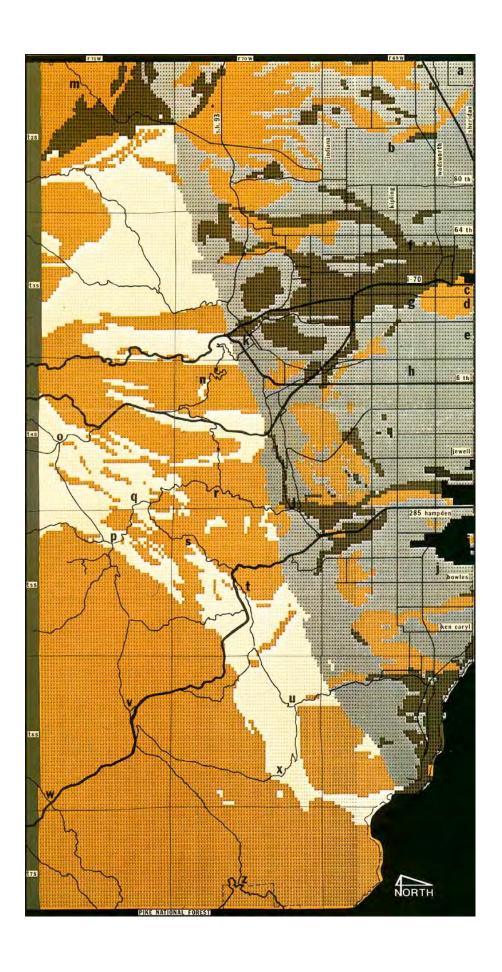
Larger scale, computer generated printouts (at scales of 1:72,000 and 1:24,000) as well as non-computer source maps are available in the Jefferson County Planning Department.

The characteristics shown on the map and their brief description is as follows

Relative Quality of Sand, Gravel and Quarry Aggregate Resources in Jefferson County, Colorado



a Broomfield, b Westminster, c Lakeside, d Mt. View, e Edgewater, f Arvada, g Wheatridge, h Lakewood, i Bowmar, j Denver, k Golden, i Morrison, m Copperdale, n Lookout Mt., o Bergen Park, p Evergreen, q Kittredge, r Idledale, s Indian Hills, t Tiny Town, u Phillipsburg, v



Characteristic	Mineral Condition	Mineral Quality
Good Quality	Clean and sound floodplain gravel deposits and tough, fine-grained igneous rock.	Material that is of high commercial value and useful for all or most commercial applications. Processing results in little waste. The material is hard and cohesive.
Moderate Quality	Terrace and upland gravel deposits in addition to granitic and gneissic rocks in the mountain areas.	Material that is of fair commercial value. Primarily useful for road sanding, asphalt, roadbase, & riprap. Processing results in fair to high quantities of waste material. The basic material may lack hardness and cohesion.
Poor Quality	Areas containing schists and amphibolites in mountain area.	The material has limited commercial value (i.e. lawn or decorative gravel) The material has a tendency to decompose & lacks the required hardness & cohesion.
Very Poor Quality	Sedimentary rocks in the plains area.	The material has almost no commercial value. The basic material lacks hardness and is very susceptible to decomposition.

Approximate Acres of Available Resources

The following chart shows approximate acres of available resources by type, quality, location and jurisdiction. (Quality ratings may change depending on market conditions and proposed use of the materials, but for our purposes here, ratings follow the guidelines in the previous chart.)

Material Type Quali	Overliby	Location		Table	Jurisdiction			Track
	Quanty	Mtn.	Plains	Totals	Unincorp.	Incorp.	Fed.	Totals
Quarry	Good	4,800	3,500	8,300	7,700	200	400	8,300
Aggregate	Moderate	116,000	2,700	118,700	118,100	600		118,700
	Poor	51,800	200	52,000	52,000	-	-	52,000
(Subtotals)		172,600	6,400	179,000	177,800	800	400	179,000
Sand and/	Good	600	15,800	16,400	13,500	2,800	100	16,400
or gravel	Moderate	600	24,700	25,300	20,900	2,800	1,600	25,300
(Subtotals)		1,200	40,500	41,700	34,400	5,1600	1,700	41,700
Total Acres of Available Resources		173,800	46,900	220,700	212,200	6,400	2.100	220,700

D. Glossary of Terms

after use

Any use of mined land after the mining activity ceases and after the final reclamation is completed (i.e. open space, commercial use, etc,)

archaeologic site

A site which contains evidence of human prehistoric past. Archaeologic sites may contain a human skeleton, a camp, a dwelling, a hunting site, etc. (See Planning Department's Archaeologic Sites map and accompanying documentation.)

consumptive

Wasteful or destructive.

final reclamation

That part of mined land reclamation that occurs after the mining activity ceases and which completes the reclamation effort.

historic site

A site which contains evidence of human historic past. Such sites may contain buildings, roads, settlements, etc. (See

Planning Department's Historic Sites map and accompanying documentation.)

in-progress reclamation

That part of mined land reclamation that occurs during the mining activity.

natural color, form and texture

Natural color, form and texture refers to the visual quality of an environment that is in a state which would occur if there were no use of the site by people. Natural color refers to earthtones, treetones, etc. Form refers to the threedimensional mass of objects or groups of objects that combine to create a unified scene. Visual texture refers to the Variation of observable surface characteristics.

significant geologic site

A significant geologic site is a site which contains; (a) a culturally significant landform, (b) dinosaur fossils, or (c) unusual mineral accumulations. Culturally significant landforms are natural features having an historic or visually pleasing characteristic and have been used historically as a geographic landmark, Such areas include colorful or unique outcrops, mountain fronts, table mountains and hogbacks. Dinosaur fossil localities are primarily footprints left in the Morrison Formation along the flanks of the hogbacks. Unusual mineral accumulations are sites that contain minerals such as fluorite, mica, quartz, feldspar, beryl, etc. which are present in such large quantities or which have such spectacular crystal development so as to be scientifically or culturally significant. (See Planning Department's Significant Geologic Sites map and accompanying documentation).

screen

Hide from observation.

suitability

Suitability is the degree of fitness of a given parcel of land for a particular land use activity. Suitability measurement is

based on an evaluation of how well the characteristics of the site meet various development criteria for a given land use.

visual impact

The visual effect for observers of any alteration of a scene or landscape in either a positive or negative manner. The impact has been measured here as a function of visual sensitivity, ability to absorb, and slope of a site. (See Planning Department's Visual Impact map and accompanying documentation.)

visually sensitive

This term is used to describe areas which are exposed to a large number of viewers, have a large area of view, or are exposed to a great frequency of viewing. High visual sensitivity is characterized by areas along highways, peaks, and exposed mountainsides which are constantly viewed by people. Low visual sensitivity is characterized by areas which are seldom viewed or are viewed only by a few people.

Before The Planning Commission County Of Jefferson State Of Colorado

Certification Of Mineral Extraction Policy Plan

WHEREAS, provisions of House Bill 1529 of the Session Laws of 1973 mandated that every populous County develop and adopt a master plan for the extraction of commercial mineral deposits; and

WHEREAS, pursuant to the provisions of Section 34-1-304, C.R.S. 1973, as amended, an extensive study has been conducted under the direction of the Jefferson County Planning Commission with regard to commercial mineral deposits of sand and gravel, and quarry aggregate within Jefferson County; and

WHEREAS, as a result of said study, a master plan for the extraction of said commercial mineral deposits has been developed including a map and its related textual materials; and

WHEREAS, approximately 160 referrals have been made to the Colorado Mined Land Reclamation Board, agencies, municipalities. citizen interest groups, industry representatives, concerned individuals and the Jefferson County Citizens Advisory Task Force on Mineral Resources and Geologic Hazards.

NOW, THEREFORE, BE IT RESOLVED that pursuant to provisions of Section 34-1-304 (3) (a), C.R.S. 1973, as

amended, the Jefferson County Planning Commission hereby approves the Jefferson County Mineral Extraction Policy Plan attached hereto as Exhibit "A" and certifies the same to the Board of County Commissioners for their consideration

Commissioner M'GILLYCUDDY seconded the adoption of the foregoing Resolution and upon a vote of the Commission as follows:

Commissioner BASHAM	-Aye
Commissioner M'GILLYCUDDY	-Aye
Commissioner PETERSON	-Aye
Commissioner ALLRED	-Aye
Commissioner HEARN	-Aye
Commissioner PORTER	-Aye
Commissioner WOLF	-Aye
Commissioner NEWMAN	-Aye

the Resolution was adopted by a unanimous vote of the Planning Commission of the County of Jefferson, State of Colorado.

I, DAVID E. PETERSON, secretary of the Jefferson County Planning Commission do hereby certify that the foregoing is a true copy of a Resolution duly adopted by the Jefferson County Planning Commission at an Executive Session held in Jefferson County, Colorado on the 23rd day of March, 1977, as the same appears in the minutes of said session.

Gloria Basham - Secretary Pro Tem

Mirie Bes kam

PUBLIC HEARING - Mineral Extraction Policy Plan

Commissioner Paterson then moved for the adoption of a resolution approving the July 22 engrossed version of the Jefferson County Mineral Extraction Policy Plan with the provision that the Board of County Commissioners consider possible amendments as proposed by the Mineral Task Force at a later date; said motion was seconded by Commissioner Clement.

Commissioner Clement called for the vote, which was as follows:

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Commissioner Joanne K. Paterson - "Aye";
Commissioner Hal Anderson - "Nay";
Commissioner Robert F. Clement, Chairman - "Aye":
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The Resolution was adopted by majority vote of the Board of County Commissioners of the County of Jefferson, Colorado.

DATED: June 28, 1977

CERTIFICATION

STATE OF COLORADO)
) ss
COUNTY OF JEFFERSON)

I, NORMAN C. ALLEN, County Clerk and Recorder and Clerk to the Board of County Commissioners of the County of Jefferson, Colorado certify that the above is a copy of a resolution adopted at the regular meeting of said Board of County Commissioners held on June 28, 1977.

NORMAN C. ALLEN

Elemen 7. Martin
Deputy County Clerk and Recorder and Clerk to the Board

It was moved by Mr. Commissioner Peterson that the following Resolution be adopted:

BEFORE THE PLANNING COMMISSION COUNTY OF JEFFERSON STATE OF COLORADO RESOLUTION

Re: Amendment to the Jefferson County Future Land Use Plan and Certification.

WHEREAS, the Jefferson County Planning Commission, did on March 23, 1977, approve the Jefferson County Mineral Extraction Policy Plan; and

WHEREAS, subsequent to the Planning Commission's approval, the Board of County Commissioners did on June 28, 1977, approve said Mineral Extraction Policy Plan pursuant to the authorization of Section 34-1-301, et seq., C.R.S. 1973, as amended; and

WHEREAS, the Planning Commission has determined that the Jefferson County Comprehensive Future Land Use Plan should be amended to include as a part thereof the recently adopted Mineral Extraction Policy Plan.

NOW, THEREFORE, BE IT RESOLVED that the Jefferson County Comprehensive Future Land Use Plan be and hereby is amended by adding thereto the Mineral Extraction Policy Plan adopted by the Board of County Commissioners on June 28, 1977.

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Board of County Commissioners as a certification to the Board as an amendment to the Jefferson County Comprehensive Future Land Use Plan.

Mr. Commissioner McGillycuddy seconded the adoption of the foregoing Resolution, and upon a vote of the Commission as follows:

Commissioner Newman	Aye
Commissioner Peterson	Aye
Commissioner Basham	Aye
Commissioner M'Gillycuddy	Aye
Commissioner Wolf	Aye
Commissioner Allred	Aye
Commissioner Porter	Aye

the Resolution was adopted by a unanimous vote of the Planning Commission of the County of Jefferson, State of Colorado.

I, M. S. M'GILLYCUDDY, Secretary of the Jefferson County Planning Commission, do hereby certify that the foregoing is a true copy of a Resolution duly adopted by the Jefferson County Planning Commission at a regular hearing held in Jefferson County, Colorado, on the 27th day of July, 1977, as the same appears in the minutes of said hearing.

M. S. M'Gillycuddy - Secretary